

Aus dem Medizinhistorischen Institut der Universität Zürich

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E L I M H O S P I T A L

A former Swiss Mission Hospital in South Africa
Its history and museum

Inaugural-Dissertation
zur Erlangung der Doktorwürde der Medizinischen Fakultät
der Universität Zürich

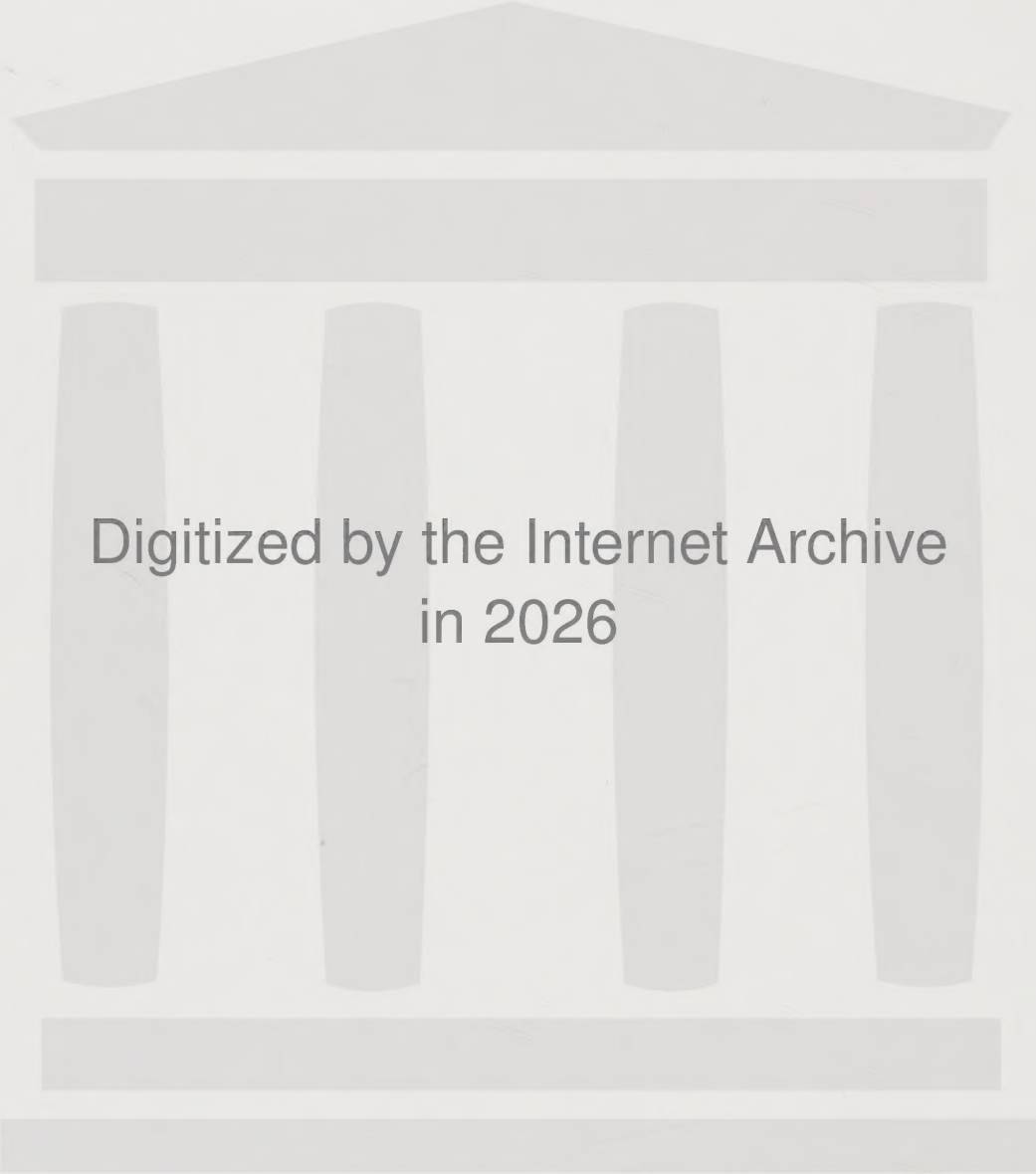
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Zürich 1985

For Margaret C. and Francine G.



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I N T R O D U C T I O N

Development of the Catalogue:

Between October 1981 and September 1983 I worked at Elim Hospital as a medical officer. During this time a German physician, also a medical officer, cleared out the hospital cellar and found a lot of old medical instruments and apparatus. These were cleaned by the doctors' wives and exhibited in two previously unused rooms of the hospital. As the objects in this little museum were lying around unnumbered, and many of them completely unidentified, I decided to make a catalogue.

I have tried to select the historically relevant objects, to identify, date and number them. As I also found historically interesting objects which were still being used (mainly in the so-called VIP theatre) I incorporated these in the catalogue as well. According to the present plans, the old VIP Operating theatre should become a part of the museum as soon as the new theatres are fully equipped.

Having photographed the museum pieces I tried to find traces of their history in the old inventories or in the hospital correspondence files. Dr. Jaques and Dr. Sutter, who have both been at Elim Hospital since 1956 and 1951 respectively, were able to give me some useful hints.

Back in Europe I continued the detective work, using old catalogues of medical equipment manufacturers found at the Medical History Museum of Zürich University and the Wellcome Museum of Medical History in London. Details of the hospital history and biographies of the superintendents could to some extent be found in the "Mission Romande" archives in Lausanne.

Structure of the Catalogue:

After the notes on Elim Hospital all objects are listed in groups with the name or title and item number (on the right). There follows a short description and comment. As the museum will be visited mainly by medical people the comment does not go into details concerning the use of the instrument, unless it is complicated or so obsolete that its purpose is no longer obvious.

NOTES ON ELIM HOSPITAL

Geography:

Elim Hospital is situated in the Republic of South Africa in the Province of Transvaal, some 400kms north of the capital, Pretoria, at an altitude of about 690m. The climate is subtropical with hot, rainy summers and mild, dry winters. The area is hilly and fertile, the vegetation consisting of grassland, bush and forests. The hospital is in a small African village, the next larger settlement being Louis Trichardt, about 20kms away.



The population and its history:

The population is mainly African, there are a few white people living mostly in the vicinity of Louis Trichardt. Among the Africans there are three tribes; the Shangaans, the Vendas and the Sothos.

The Shangaans, also known as Tsongas or Magwambas, number more than 500'000 in South Africa and 1.3 million in Mozambique, they occupy the coastal belt stretching from Kosi Bay to the river Sabi. In 1820/1821 they were conquered by the Zulus under Chief Shoshangane, from then on they called themselves Shangaans and have been deeply influenced by the language and customs of their conquerors. The local Shangaans are descendants of a party of about 15'000 who arrived in the area in 1853, coming from Mozambique with their half-caste chief, Albasini.

The Vendas, who numbered about 250'000 in 1960, must have arrived in the area at the end of the 17th or beginning of the 18th century. An interesting section amongst them, the Lembas, have many semitic traditions (e.g. not eating pork) indicating that originally they may have come from Northern Africa. The Vendas were first documented in 1836 when the first so-called Voortrekkers moved inland from the Cape.

The Sothos, especially the Northern Sotho or Pedi (numbering approx. 5 million), are mainly concentrated towards the south around Pietersburg, 100kms from Elim.

Most Non-Africans in the area speak Afrikaans, a language developed from 17th century Dutch, and are descendants of the Voortrekkers, originally Dutch-speaking Boers (farmers) who, not liking the British rule of the Cape and Natal Colonies, trekked northwards in search of new lands, arriving in the area they called Soutpansberg in 1836. They founded the first settlement nearby in 1848, 12kms from the present Louis Trichardt.

The white population towards the end of the last century also included adventurers of British, Portuguese and Russian origin, who made a living by hunting elephants.

Relations between the various population groups were not always friendly. There were tensions between Tsongas and Boers in the 1870s, when the Swiss mission had to negotiate. In those days the Tsongas and Vendas also clashed on various occasions. Even though the area was only marginally involved in the Boer war (1899-1902) also caused quite a turmoil in the region.

One can also find accounts of inter-racial tensions in the annual hospital reports. Dr. des Ligneris, for example, writes 1920: "Nous avons plus que jamais expérimenté durant l'année écoulée comme il est difficile et même épuisant de mener bien et sans faire nuire l'une à l'autre, le travail médical parmi les blancs et celui parmi les noirs. Celui-ci devient de plus en plus difficile, parce que d'abord l'un et l'autre vont en augmentant ou du moins devraient aller en augmentant et puis parceque l'antagonisme des races et des haines mutuelles rendent la position d'un médecin missionnaire de plus en plus difficile."

At the time of the foundation of the hospital the Soutpansberg area belonged to the Boer Transvaal Republic, from 1910 to 1960 to the Union of South Africa and since 1961 to the Republic of South Africa. The hospital now falls within the area which has been allocated to Gazankulu, the "homeland" of the Shangaans.

The missions:

Elim (the name derives from an oasis in the bible ((Ex 15, 16, No. 33)) was a mission hospital up to 1976. Missions in Southern Africa started as early as 1560 when the Portuguese Gonzolo da Silveira came to Mozambique. In 1737 the German Moravia mission was founded, followed by the London mission in 1799 and the French mission in 1829. The first mission in the Soutpansberg area was the Berlin mission.

The hospital was founded by the "Mission Romande" in Lausanne. This mission society was established by the "Free church of the Canton of Vaud" in 1872; it had its first base in Basutoland (now Lesotho). In 1875 the missionaries trekked for three months with ox-wagons from Basutoland to the Soutpansberg and bought a farm. There they established their first mission station called "Valdezia", Latin for "Canton de Vaud". Elim mission station was then founded in 1878 and the missionary Ernest Creux settled there. He had had one year of paramedical study in Edinburgh and soon started to treat patients with minor ailments to the best of his abilities. As the years went by the need for a fully qualified doctor grew and in 1897 Dr. Georges Liengme (1859-1936) was sent to the area by the mission headquarters in Lausanne. Under very primitive conditions he then established a hospital in an old mill in 1897.



Figure 1 Dr. Liengme, about 1900

The history of the hospital:



Figure 2 Dr.Liengme on his round

In 1899 the first buildings at the present hospital site were inaugurated by the hospital founder Dr. Liengme. This meant that Elim Hospital was one of the first mission hospitals for Africans. From the time of arrival of the first Europeans up to the middle of the 19th century no specific measures were taken to provide any medical aid to the indigenous population. In a few hospitals, for example in Pietermaritzburg, there was already the possibility of admitting Hottentots or Coloureds of Malay origin, who were then working as servants, in the late 18th century. The first hospitals for Africans were founded in 1855 in Pietermaritzburg and in 1859 in King Williams Town ("In order to cure the Natives of their ailments and to break the power of the Witchdoctors"). There are no indications to be found that there was any medical help for the Africans from the missionaries in South Africa before the end of the 19th century; the first mission hospital for Africans only was the Victoria Hospital in Lovedale, founded in 1898 by the Scottish Mission. In 1909 there were three hospitals for blacks only in South Africa (in the Cape Province alone the Africans already numbered more than two million). The number of mission hospitals for blacks only rose from 1944 onwards.

In the 19th century the number of medical facilities in the Transvaal was generally very low. Before 1851 there was no doctor available for the whole Transvaal and Orange Free-state, by 1885 there were thirty. In 1860 the Pretoria hospital was built, followed by the first Johannesburg hospital in 1890, which by 1896 had 300 beds. - Of course, both these hospitals were reserved for white people!

When Dr. Liengme came to the Soutpansberg area he had already had some experience as a missionary doctor. After having worked as a watchmaker until the age of twenty, Dr. Liengme studied medicine in Berne and Geneva and graduated at the age of thirty-one. In 1891 he went to Mozambique as a missionary doctor. Between 1893 and 1896 he lived under the protection of the last Shangaan paramount chief, Gungunyani, in whose area he built a bamboo hut hospital. When the Portuguese defeated Gungunyani the hospital was burnt to the ground and Dr. Liengme had to flee to the Transvaal. When he arrived at Elim he established his hospital in an old mill and from 1897 onwards his skill and devotion were continually sought after by Africans and Non-Africans alike, although he was actually sent to the mission as a doctor for the black people only. Finally, he was asked by the Transvaal Government to build a real hospital under the following conditions: The Government offered to grant a loan for the necessary capital for the construction of the hospital and buildings, as guarantee the mission was to pay 4% interest on the capital. The mission would run the hospital and administer it; the medical mission at Elim would be under the control of the "conseil" of the mission society in Lausanne as its superior body, the hospital would be administered by a local commission (four people, of whom one was the doctor) and the medical commission in Lausanne (five to seven people, two being doctors). Financially it was to be self-supporting, drawing funds from fees from non-pauper whites, doctors fees from home visits, sales of medicines and hiring out of wagons and horses. Government allocations for white paupers and the black hospital and, donations from Switzerland supplemented the resources. To gain more independence from the state, the capital for the hospital buildings was then finally provided by a newly formed society, the "Société immobilière" of the mission. Interest was 6%, of which 2% went into a special fund for "eventualities".



Figure 3 The European hospital about 1900

From the beginning there were in fact two hospitals in Elim. The white Non-African part was somewhat higher on the hill than the black African part. The disease patterns differed considerably from one population group to the other. The blacks suffered mainly from Tuberculosis and Lues (Dr. Liengme talks of numbers from 50-65% of all patients), while the whites came mainly with malaria and for general cures.



Figure 4 The African hospital about 1900

The early Elim hospital has to be imagined as a small, very remote enterprise. Most of the equipment had to come via Mozambique's nearest port and, with the train going only as far as Pietersburg - 110km to the south, the rest of the way involved a ten-hour mule-coach drive. There being no sizeable settlement nearby, a self-sufficiency concerning food, transport etc. was necessary. The usual number of patients in the white section was about 6 - 9, maximal capacity being 20 patients, some of whom had to be lodged at the doctor's house.



Figure 5 Map of Elim Hospital 1906

The Boer war broke out as the hospital was founded. Dr. Liengme was appointed medical officer for the Boer forces and served in the Boer army for six months. The main problem after the war was malaria with all its complications. The first laboratory was built in 1913 and after 1916 there was electricity available from a diesel generator. About 1920 the first x-rays were taken. By 1914 there were 14 beds for whites and room for 70 to 80 African patients. After the big Influenza epidemic of 1918 the "Public Health Bill" was passed, under which the first out-patient clinics were established in the surrounding villages. Buildings were constantly being added: 1927 a new operating theatre, 1937/8 a new black hospital with room for 56 patients and 2 new operating theatres, 1950 an eye hospital in a separate building, 1954/5 a new out-patient department, 1958 a maternity ward and a TB-isolation ward, 1969 another 2 large modern wards.

A few figures:

Year	In-patients		In-patients	
	African	Patient days	Non-African	Patient days
1901	178	7'914	87	1'230
1915	420	14'334	136	2'338
1925	1'510	60'788	176	3'371
1935	1'315	40'207	669	9'070
1945	2'561	62'155	631	6'779
1955	6'823	115'075	362	3'329
1968	14'121	247'548	281	2'262

After 1945 the number of Non-African patients dropped due to the fact that the hospital in Louis Trichardt was opened in 1944.

Dr. Liengme left his foundation as early as 1906 and retired from the mission in 1907. He returned to Switzerland, where he became superintendent of the psychiatric hospital in La Rochelle (near Concise VD). He eventually died in 1936.

His successor, Dr. James Borle (who also held a degree in theology), was in charge from 1906-11 and again from 1914-18. He opened a private practice in Johannesburg in 1918 and died the same year from influenza. His widow returned to Elim and practised ergotherapy until 1976.

Dr. Max des Ligneris (1882-1952) was superintendent from 1911-1914 and 1918-26. During the interval he worked in China. Upon terminating his work at Elim Hospital he went into the field of medical research in Johannesburg.

Dr. Felix Augsburger was in charge from 1927-33. In 1951 he opened a practice east of Bloemfontein (Thaba Nchu Mountain).

Dr. Jean Rosset was born in 1905 as the son of missionaries in the Transvaal, near Elim. From 1924 to 1930 he studied medicine in Switzerland, graduating in Lausanne. He passed the "School examination of the London School of Hygiene and Tropical Medicine" with distinction, gained a Diploma in Tropical Medicine and Hygiene of the Royal College of Physicians, London, and the Royal College of Surgeons of England as well as the "Triple Qualification" from Edinburgh. He was in charge of Elim Hospital from 1933-65. His wife, Odette Rosset-Berdez, born in 1901, was an ophthalmologist and she built up the eye hospital. After Elim they retired to private practice in South Africa. Dr. Rosset died during a holiday in Europe in 1972.

Dr. Pierre Jaques has now been in charge since 1965. Like Dr. Rosset he is the descendant of a missionary; he was born in this hospital and speaks perfect "Shangaans".

Elim Hospital today:

Since 1936 there has been a growing number of posts available for medical officers. At the moment there are about 12, including one specialist post for an ophthalmologist. The hospital can accommodate up to 450 in-patients and also has a large out-patient section. The name "European hospital" has been given up; the part higher up on the hill is now called the "VIP ward" and is reserved for all private patients, irrespective of the colour of their skin. A teaching contract with the University of the Witwatersrand (Johannesburg) has been in existence since 1983. Plans are being prepared for the enlargement and modernisation of the hospital. The Government is also building a new township next to the hospital for resettlement of the Shangaan population of Louis Trichardt.

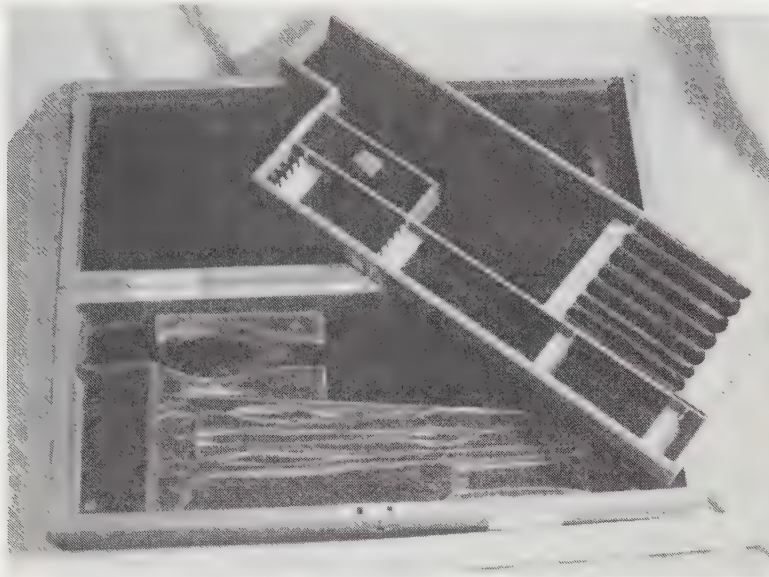
References : 2, 13, 14, 20, 24, 29, 30, 32, 45

C A T A L O G U E

General surgery:

Mahogany instrument case

11



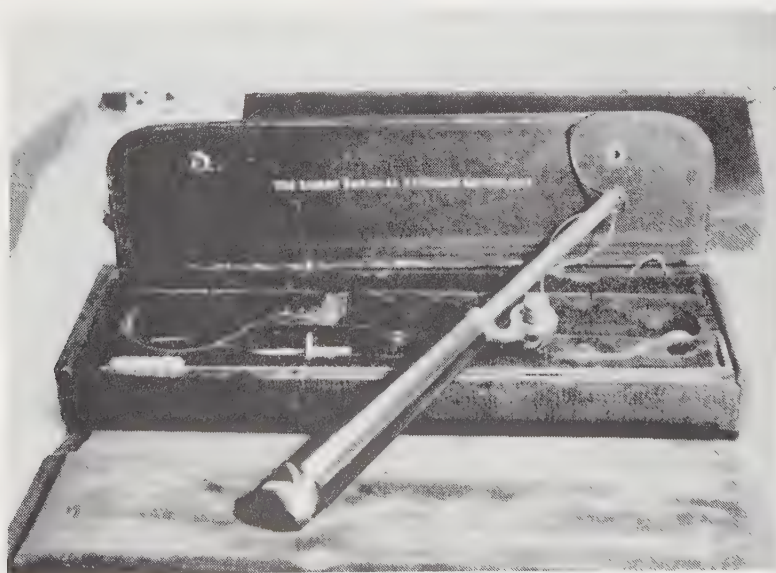
43x17,3x7cm instrument case, brass plated, velvet lined.

Inscription: "British National Society for Aid to the Sick and Wounded in War". 2, St. Martins Place, London.

The case is empty.

The Singer surgical stitching instrument:

12



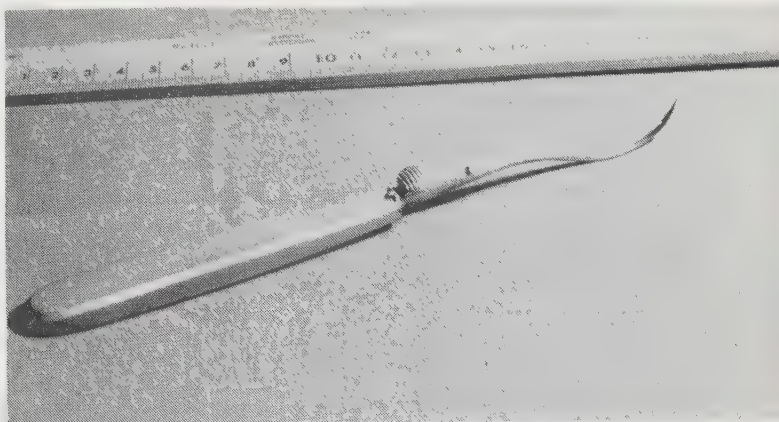
26,5x10x3,5cm imitation leather case with blue satin lining. 22cm instrument with Bakelite handle, 3 extra wheels with chromic catgut, brush with extra needles.

Inscription: "The Singer surgical stitching instrument. Made in USA."

According to Singer's general agent in Switzerland Singer produced such an instrument in the 1950's. The fact that the handle is of Bakelite suggests a much earlier date of production.

Reverdin's needle

13



20,3cm handled needle with slot eye which could be opened and closed by means of a pin.

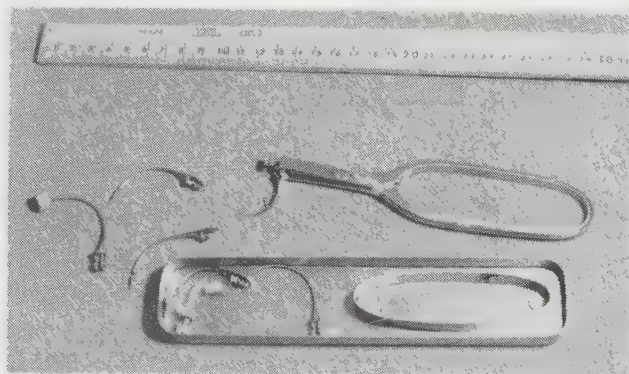
Inscription: "M. Schaerer AG."

This needle was first introduced in 1879 by Jaques-Louis Reverdin (1849-1929) of Geneva. It has the advantage of being quite atraumatic in that the slot eye for the thread could be closed. It is still used today, although not in Elim.

References : 3, 36, D

Reverdin's needle

14



19,3x4,1x1,1cm metal box containing 16cm handled needle with slot eye at the end, which opens with grip movement on handle. This needle is fixed rectangularly.

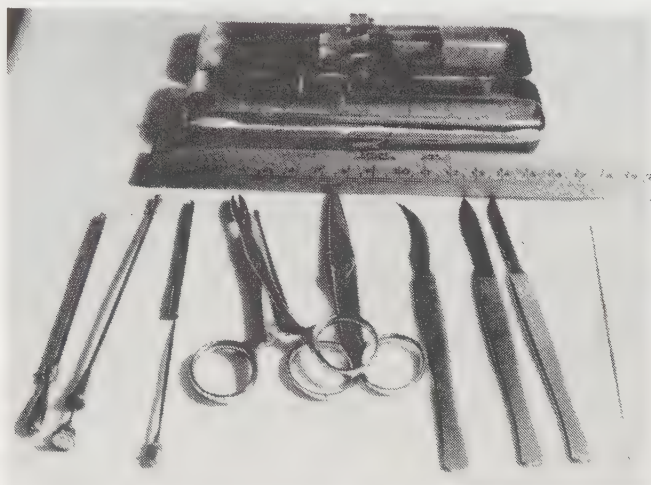
Inscription: "LUER A PARIS".

This modification of Jaques Louis Reverdin's needle was issued in 1887 by Auguste Reverdin (1848-1908) of Geneva, a cousin of the latter. Its advantage was the more physiological mode of suturing, making the use of the pro- and supination movement of the hand possible. This particular model was used at Elim up to 1965 and was probably ordered in 1938.

References : 5, 36, Lü27

Aseptic pocket dressing case

15



15x2,3x5cm metal case, containing 12,5cm ear scoop and director, 13cm trocar and cannula, spear point needle, 8cm probe, 11,5cm Doyen needle holder, 12cm dressing scissors with Collins lock, 1 abscess knife and 3 scalpels of 14,6cm length. Separate compartment for needles and silk.

Inscription case: "64"

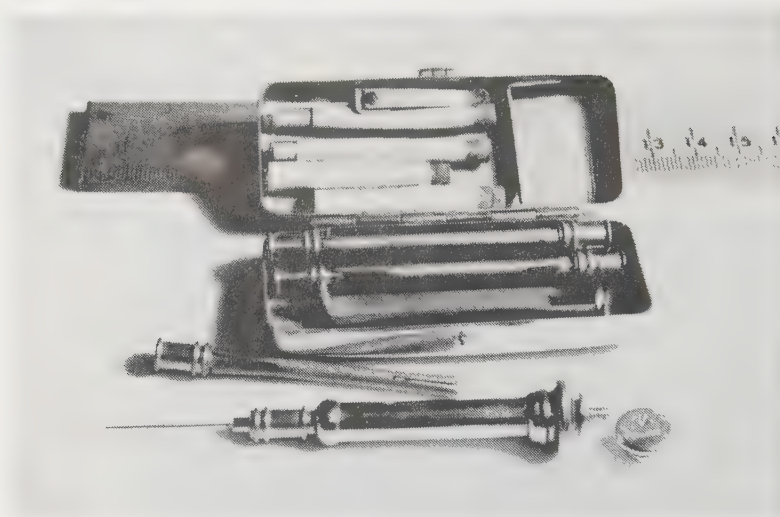
Inscription Doyen needle holder: "F127"

This set was most likely produced by The Surgical Manufacturing Co., London, in the 1920's.

References : SM25, SM26

"Army pattern" hypodermic syringe

16



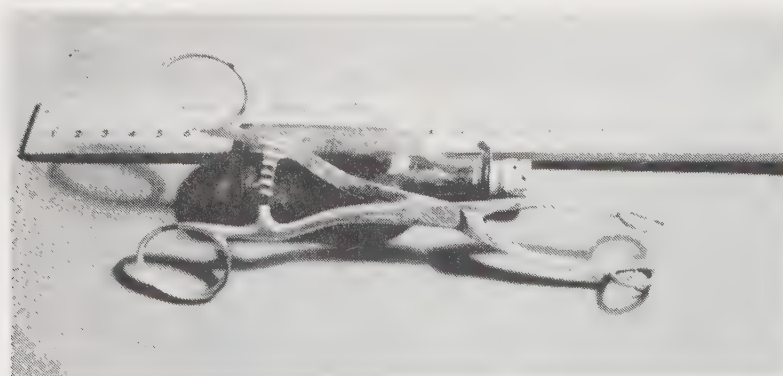
3x8x2,1cm metal case, containing an all metal syringe with steel cylinder and 6 needles and "tabloid" rolls of Morphine tartrate of Burroughs Wellcome & Co. London, Digitalin, Strychnine Hydrochloride. Inscription: "General Surgical Co. Ltd."

This syringe must be dated before 1925.

References : SM25, SM 26, Inv12

Kocher's gland forceps

I 30

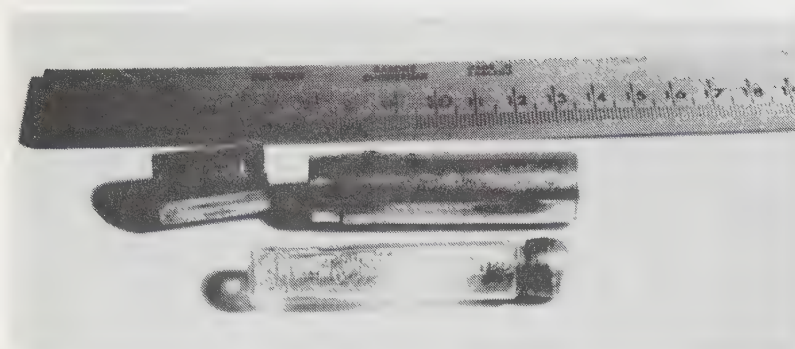


16,4cm forceps with a "Collin's lock".

Inscription: "Down London"

Dr. Vömel's suturing material

I 10



88x1,5cm metallic box with bayonet clasp. Glass bottle, metal lid.

Inscription box: "Hanhart & Co."

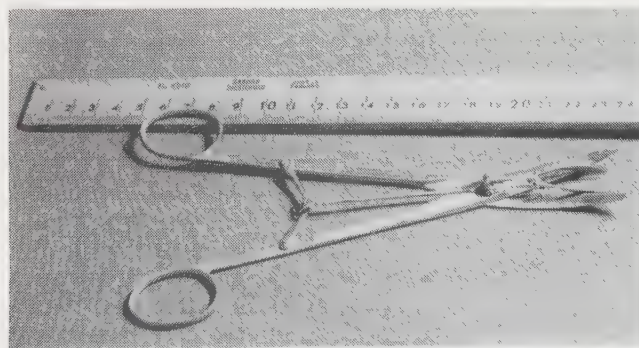
Inscription bottle: "Vömel Nähmaterial"

In 1890 the novelty of this kind of container for suturing material was that it was the first which enabled the use of a single piece at a time.

References : 6, Ae22, Sch04, Hn03

Biopsy scissors

I 28



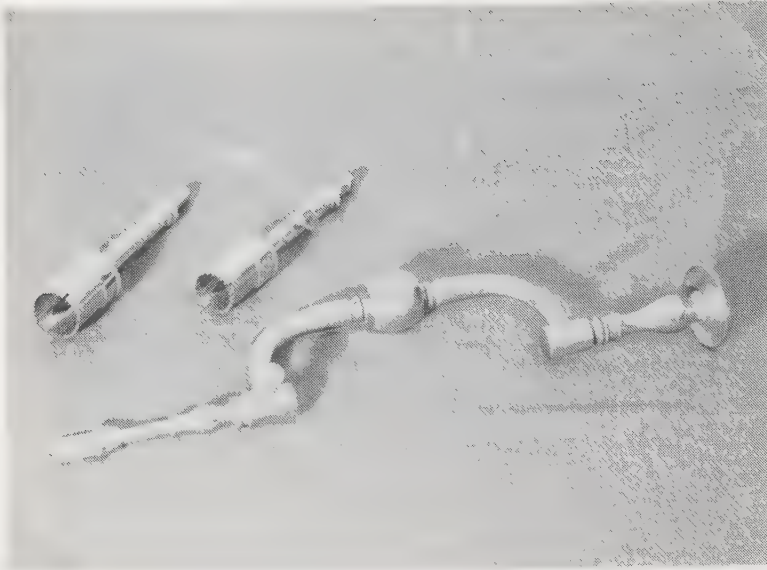
19cm scissors with two spatula for lifting the tissue before cutting.

The design was very common and is nearly the same as Smith's scissors for transplantation, mentioned 1904 by Schaerer and 1927 by Aesculap.

References : Ae22, Sch04

Trephine

I 27



29cm drill with three interchangeable bits.

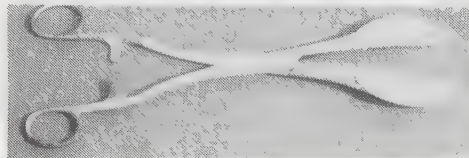
Inscription: "M. Schaerer AG" and the trade sign of the Aesculap Co.

This was a very common design of trephines. In the inventory of 1911 there is a remark about three drills.

References : Sch04

Langenbeck's Haemorrhoidal forceps

I 15



27 dismantable forceps, distal end covered by two ivory semi-ovals.

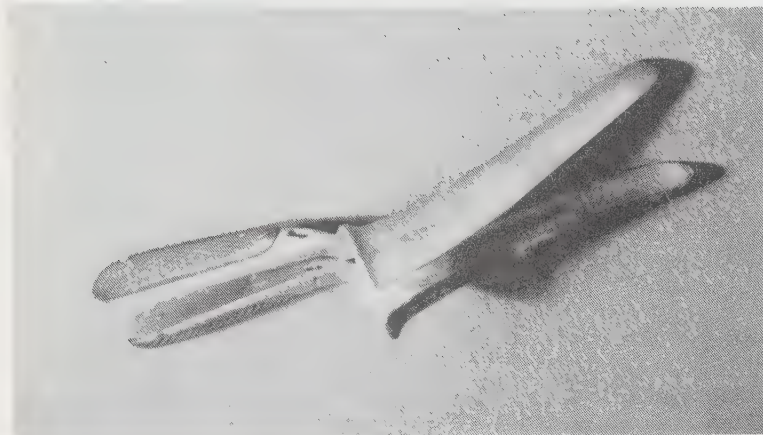
Inscription: "L13"

This instrument was popular around 1900, when it was used for heamor-rhoidectomies together with the Paquelin thermocautery apparatus. Bernhard Langenbeck was a surgeon in Berlin and lived from 1810-1887.

References : Ae22

Ricord rectal speculum

I 18



17,5cm speculum with wood-covered grip, bolt for clamping the two handles together is missing.

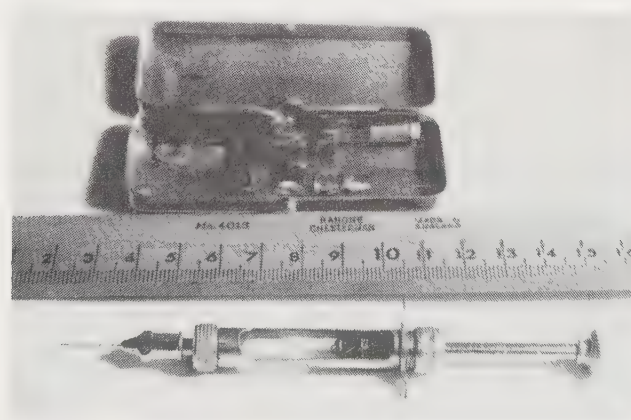
Inscription: "J. Pohl, S. Hage"

Around 1900 the Ricord speculum was sold with wood-covered grip, later with a metal one.

References : Ar95, D00, A&H30

Hypodermic syringe

I 7



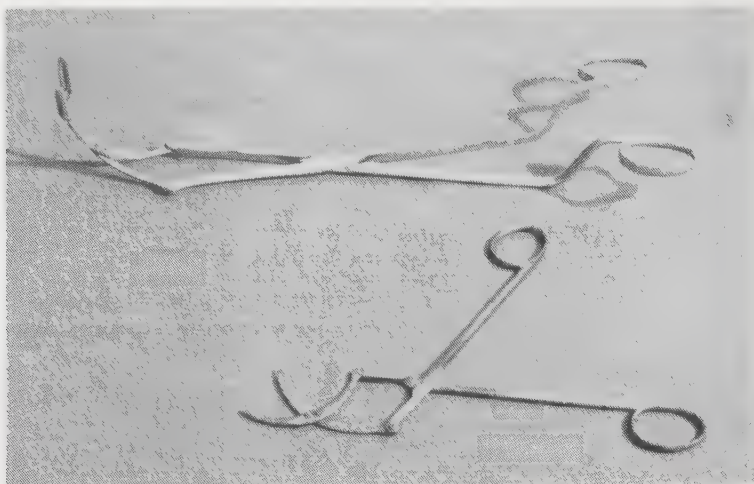
8,5x1,5x3,5cm metal case, containing one brown glass tube, two needles and a syringe with a glass tube and a rubber plunger.

Inscription: "Bay State" and "The Randall FAICHNEY Co. Inc. Boston USA", units: 5, 10, 15, 20

The fact that the plunger of this syringe is made of rubber speaks for an early production date; it cannot be called "aseptic".

Unidentified instruments

I 19 & I 20



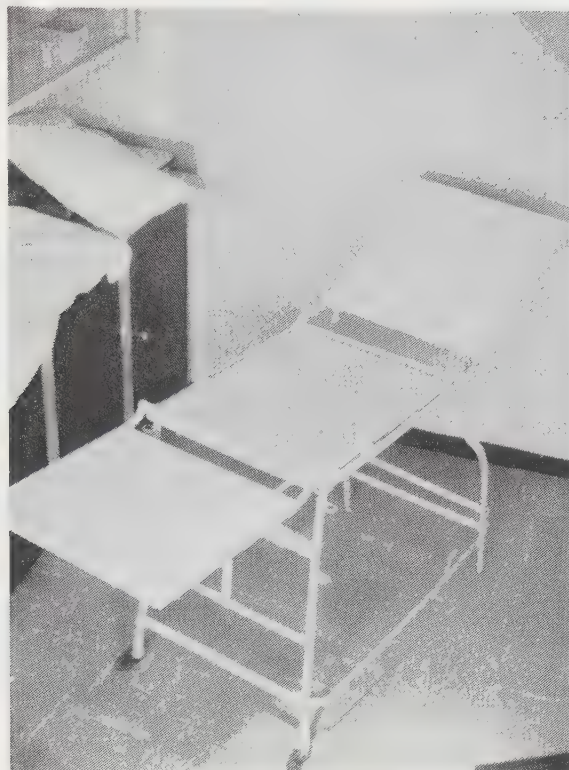
34cm double jointed forceps, distal end 1,5cm long with groove and
20cm double jointed scissors.

Inscription on both: "Mathieu"

Both these instruments could be used either for Gynaecology or, less likely, for larynx surgery. They are not mentioned in the available medical catalogues.

Buchanan's operating table

T 1 & T 2

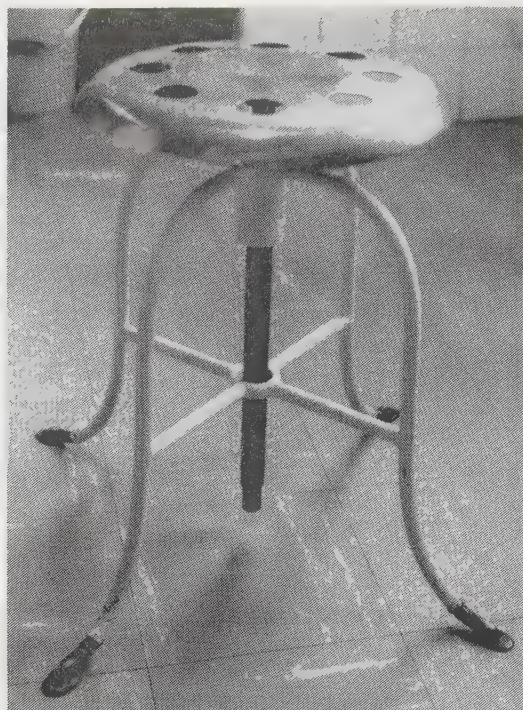


Two 185x80x47,5cm operating tables with three adjustable boards. These two operating tables are similar in design, but T2 is portable. They could have belonged to the original hospital equipment of 1899 although the operating tables then are mentioned under the name "De Quervain". They are still used nowadays as examination couches in the superintendent's consultation room.

References : Ae22

Adjustable stool

T 3



This also belonged to the original hospital equipment.

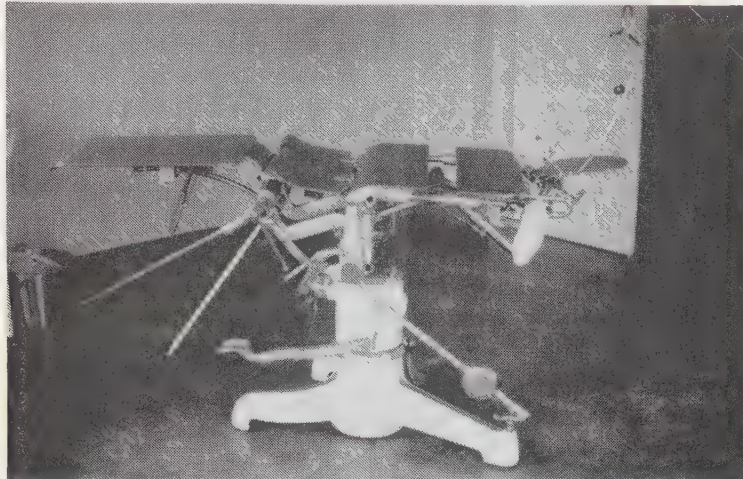
References : A&H04

VIP Operating theatre:

This theatre was still used occasionally in 1983. Plans were to incorporate it into the museum as soon as the new operating theatre would be opened.

De Quervain's operating table, original Model X

T 4



Hydraulic operating table with many possibilities for adjusting the position of the patient.

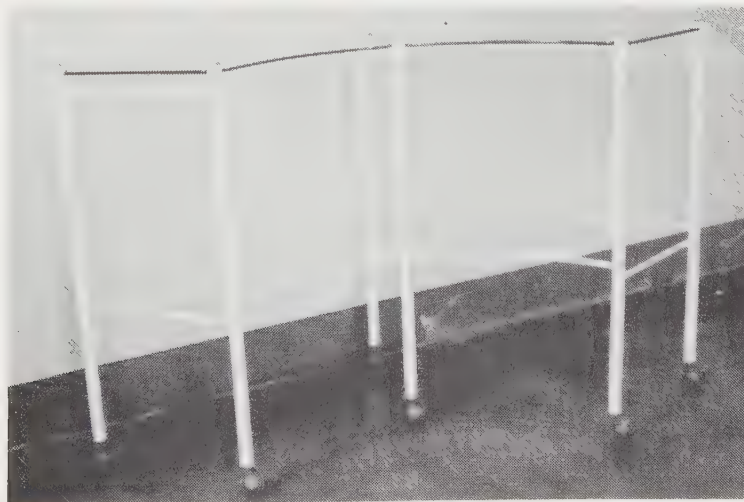
Inscription: "Maison M. Schaerer S.A. Berne, 41,541 R"

After some precursors Prof. Fritz de Quervain devised his Model X operating table in 1912. Later on it was modified many times. This table was ordered in Switzerland in 1938.

References : Sch12, 13

Instrument table

T 6



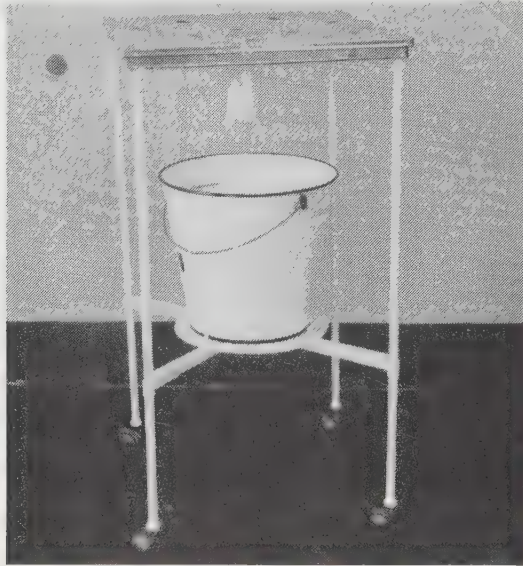
88cm table with two armour plate glass shelves, six legs, mounted on rubber tyred castors.

Aseptic instrument tables like this were available from different producers from the early years of this century.

References : A&H10, A&H30, A&H53

Dressing trolley

T 7



84,5x44,5x44,5cm enamelled trolley with perforated steel lid, funnel and enamel bucket.

This design was already popular around 1910.

References : HSEx

Instrument cabinet

T 5



157,5x76,5x40,5cm metal cupboard with glass windows and wooden poles.

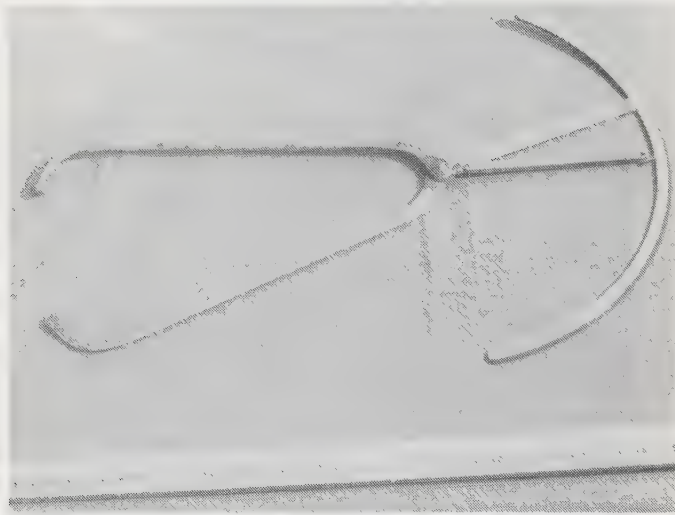
Inscription: "Allen & Hanburys Ltd., Surgical Instrument Makers, 48 Wigmore Street, London W"

This cabinet is still used in the foreroom of the VIP Operating theatre.

Obstetrics:

Budin's pelvimeter:

I 14



42cm Pelvimeter.

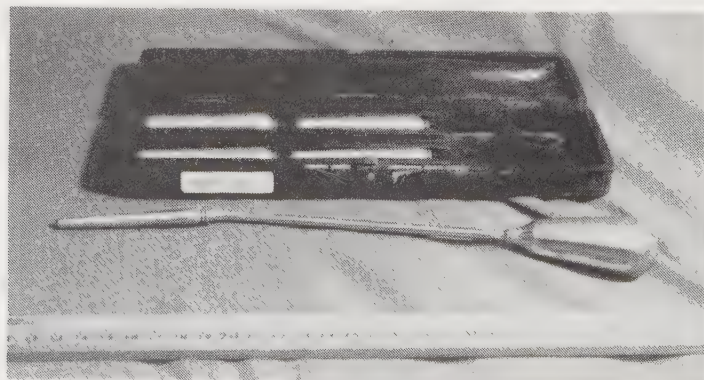
Inscription: "Mathieu"

This instrument was available from Mathieu in 1897 and slightly modified from Lür in 1927. It is named after Pierre Budin (1846-1907), an obstetrician from Paris. The first time a pelvimeter was mentioned in the inventory was in 1911.

References : Lü27, Ma95, Sch04

Fritsch's set of uterine dilators

I 11



24,8x6,5x3cm leather covered wooden case, containing a dilator set with 5 different bougie ends.

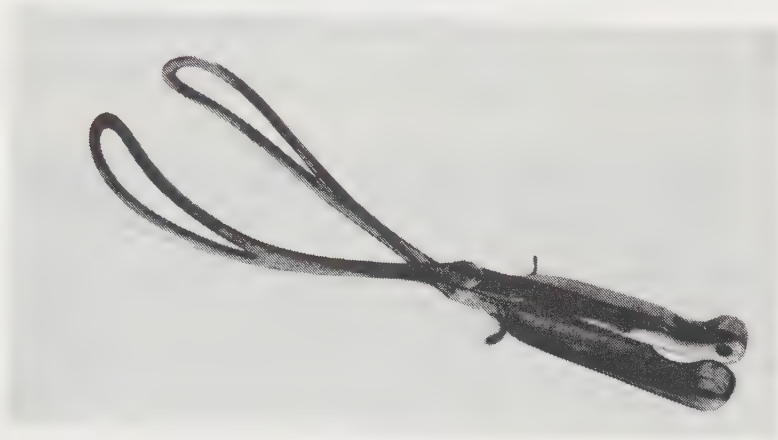
Inscription: "Down Bros."

Fritsch's set of uterus dilators was available from Downs in 1914, but no longer in 1929. Fritsch Heinrich was a German Gynaecologist living in Bonn from 1844-1915.

References : D14, Sch04

Naegele's forceps

I 13

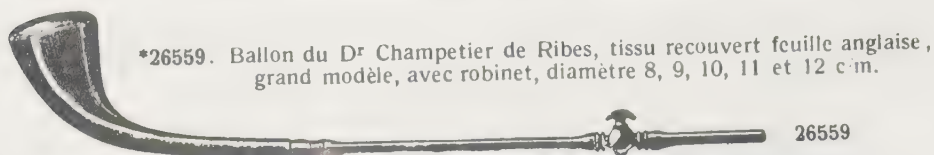


44cm obstetrical forceps with woodcovered handles.

In the usual Naegele's forceps the fingergrrips are supported and smoothed with wood these, however, are pointed and unsupported, which suggests that the handles are a later replacement. Franz Karl Naegele (1777-1851) was an obstetrician from Heidelberg.

Forceps for introducing Champetier de Ribes dilating bag

I 16



*26563. Pince porte-ballon, du Dr Champetier de Ribes, grand modèle, pour ballons de 8, 9, 10, 11 et 12 c'm de diamètre.

31cm forceps with detachable joint:

In 1887 the French obstetrician Champetier de Ribes designed a bag made of rubber covered with silk, which was inserted into the uterus by means of these special forceps. After insertion it was then filled with water in order to induce or accelerate the opening of the uterus during the delivery or in late pregnancy. The Germans called this procedure "Kolpeuryse", "Metreuryse" or "Hystreuryse". Jaschke and Pankow wrote in 1920: "The Metreuryse has lately gained a respected position amongst the obstetrical operations; we have seen it quite often as a measure to accelerate delivery in urgent situations when the cervix is not yet open, like in eclampsia or placenta praevia."

The instrument was available up to 1953 from Allen & Hanburys.

References : Ma95, Ae22, A&H53

Bossi's cervical dilator

I 24



39cm four-pronged expanding dilator, scale from one to eleven.

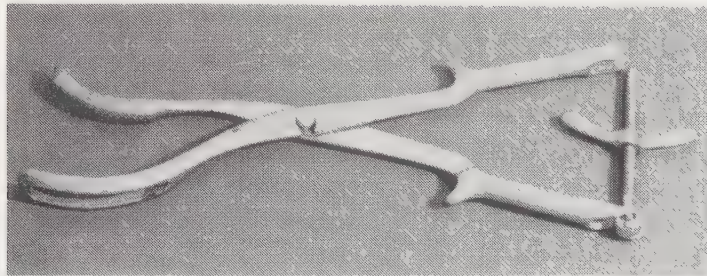
Towards the end of the 19th century some obstetricians began to use some more forceful methods of induction such as this instrument devised by Luigi Maria Bossi (1859-1919). Jaschke and Pankow write in 1920: "The dilatation with Bossi's instrument takes a position inbetween invasive and non-invasive dilatation ... The steps of dilatation occur with rests of 2-3 minutes. The instrument is not very popular in Germany as even with careful manipulation there are some severe, even deadly complications."

Bossi's dilator was available up to 1927 from Luer.

References : HsEx, Lü27, 27

Braun's cranioclast

I 23



44cm forceps with detachable joint and screw for reinforcing closing.

Like I 22 this instrument was devised by K. Braun, an obstetrician from Vienna, who lived from 1822-1891.

References : Ma95, Lü27, HsEx

Braun's decapitation hook

I 22



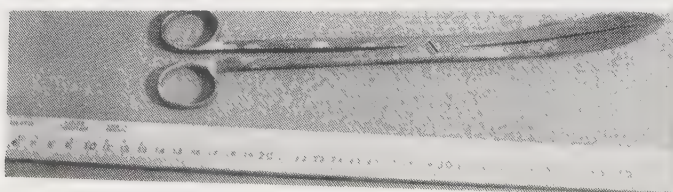
38cm blunt hook:

The design is similar to that mentioned in the catalogues around 1900.
In the 1899 inventory there are two blunt hooks mentioned.

References : Sch04, Ae22

Siebold's perforator

I 17



31cm scissor-shaped instrument with blunt inner and cutting outer edges.

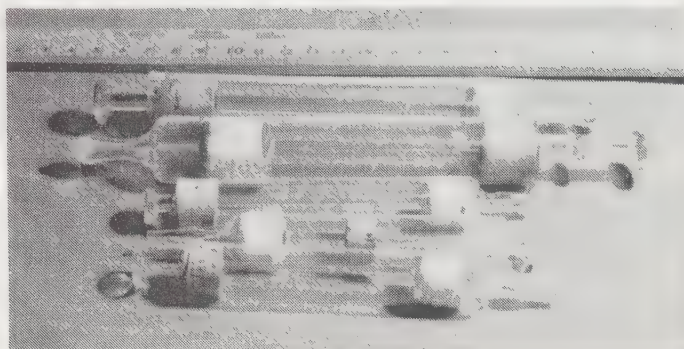
This perforator is named after Adam Elias von Siebold, a German obstetrician, who lived from 1775 to 1828.

References : Hn02

Urology

Urethral syringes

I 8



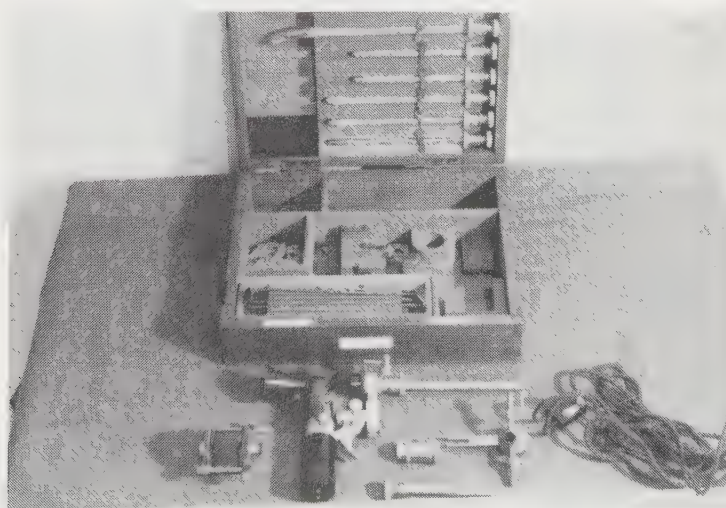
One cardboard box full of 13-18cm long glass syringes with glass plungers wound with thread and cork at the end.

Glass syringes of this kind were used widely from the last century onwards; they were produced by almost all manufacturers and still sold in the 50's of this century. The reason they landed in the cellar is that with the advent of the chemotherapeutics and antibiotics the local therapy for gonorrhea became obsolete.

References : A&H53

Casper's urethroscope

D 2



25,5x20x7cm wooden box, containing six tubes with trocars of different sizes, a light source at the end of a handle, a collecting lens, a prism with a dip of 45 degrees to direct the concentrated light into the tube which can be fixed just in front of the handle, a funnel for sighting, an electric supply and a device for irrigation.

Inscription: "Allen & Hanburys Ltd. London"

Leopold Casper (1859-1959) was an urologist in Berlin before he had to flee to New York in 1938 being Jewish. At the turn of the century his urethroscope using a light source outside the body was a rival to Nitze's cystoscope. In the 1920's it became definitively obsolete, surviving for some time however as a carrier for other tubes, for example for rectoscopy. Caspar himself in 1910 wrote that several people left the Nitze cystoscope and went back to the previous methods, i.e. the urethroscope. In 1930 he wrote that the urethroscope was obsolete.

References : 11, 12, 28

Irrigating double uretero-cystoscopes

D 3 & D 4



33,7x14x16,3cm wood box, containing a) one 27cm distal lighting cystoscope with flap, with two grooves which can be adjusted upwards by way of a proximal wheel; the grooves are for the ureter catheters which can be introduced into two taps on the cystoscope in front of the wheel, b) one 27cm examination cystoscope, c) two optic catheters, d) one set of "Lupus" lamps, e) electric wires with clamps for fixing them on to the cystoscopes. The second box also contains a cystoscope of the same period and the same manufacturer.

Inscription: "Georg Wolf G.m.b.H., Spezialfabrik für Kystoskope, Berlin NW6, Karlstrasse 18". On the plate inside the lid: "Ersatzlampen mit genau passender Fassung und höchster Leuchtkraft erhalten Sie nur, wenn Sie bei Ihrem Lieferanten unsere Lupus Lampen fordern und zwar für dieses Instrument Nr:7 gross 10 klein."

The cystoscope with distal lighting is an invention of Max Nitze (1848-1906 of Vienna). Trials to bring the light source nearer to the bladder included putting a glowing Platinum wire into the rectum by J. Bruck, a dentist from Breslau, in 1867. In 1879 Nitze described his cystoscope using also a glowing Platinum wire at it's distal end which needed cooling irrigation. In 1880 Edison invented the incandescent lamp and shortly afterwards, in 1886, the "mignon" lamp was invented which, due to it's low heat production, made cooling unnecessary when put into a cystoscope.

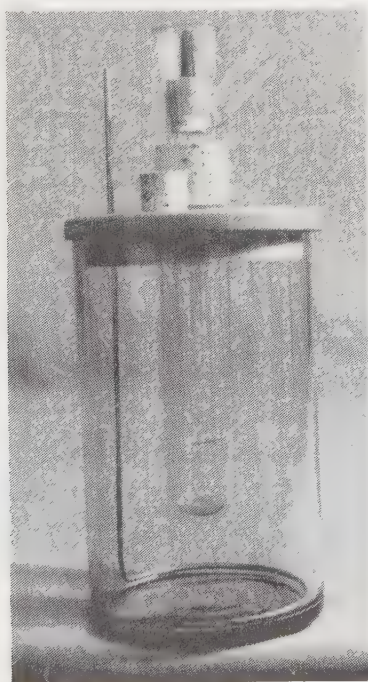
These instruments are a developed version of a cystoscope described by Ringleb for the first time in 1909. The idea of this kind of cystoscope was that the optics could be exchanged. In order to prevent leakage of irrigation water while changing the optics a valve was constructed. These instruments are mentioned in the catalogue of the Georg Wolf Company of the 1930's under "Combination II of a double ureter and irrigation cystoscope". A detail on the wheel indicates that the instruments must have been produced shortly before the Second World War. The Richard Wolf Company, Knittlingen, stopped production of these instruments in the 60's, at Elim they were used up to 1973.

According to Casper the indications for inducing catheters into the ureters in 1930 were: The diagnosis of stoppages in the ureters, to differentiate whether the bladder or the kidneys are affected and to discover whether both kidneys are functioning.

References : 11, 12, 33

Beckmann's cryoscope

L 9



Glass container, 18cm high, 11cm diameter, wooden cover with a 3,5cm hole in the middle, two of 1,9cm and one of 3mm nearer the rim. In the large hole in the middle there are two test tubes, one inside the other, the inner one with an extension for filling.

The container used to be filled with a mixture of water, ice and common salt. There were thermometers in each tube. In the smallest tube one put some urine. When the container with the urine was put into the cold mixture, the temperature on it's thermometer dropped. When the urine became cristalline it's temperature rose sharply. The point where it settled showed the osmotic pressure of the urine.

Beckman devised this apparatus in 1888. Windler in the 1912 catalogue describes this cryoscope as an apparatus to measure the freezing point to find out how the kidneys are functioning before an operation.

Casper in 1930 wrote: "With a few exceptions, cryoscopy only has a clinical value if the urine portions from the two kidneys can be compared separately at the same time. This can be achieved by catheterisation with the ureter cystoscope."

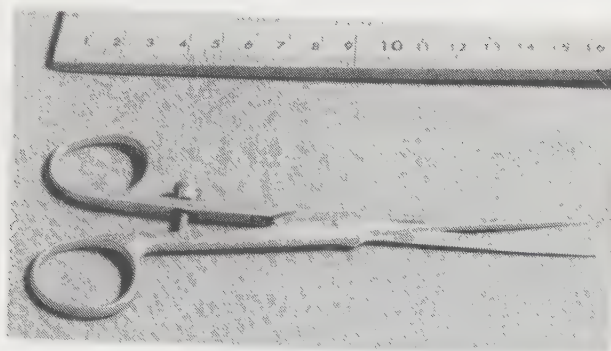
As the Elim ureter cystoscope dates from the years before the Second World War, this cryoscope has probably about the same age.

References : 11, 12

Veterinary instruments:

Scissors for the udder

I 31

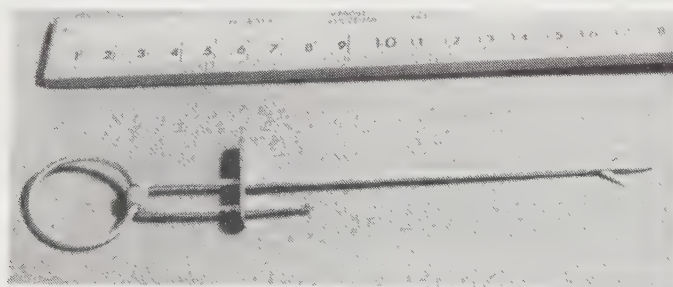


15,3cm blunt scissors with screw.

This instrument is called "Strichkanalschere nach Chrestensen" in the Jubilee Catalogue of the German manufacturer H. Hauptner.

References : Hp32

Teat evacuator



17,5cm instrument with two knives in a hull.

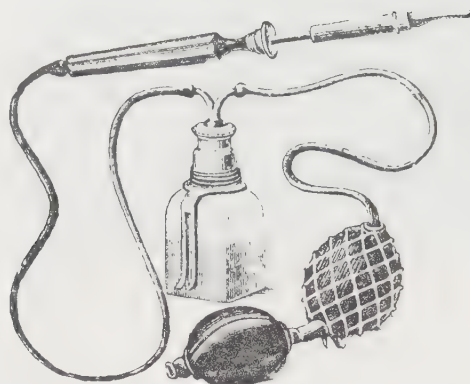
This instrument is usually of veterinary origin and used for opening the teats of an udder. It might also be used as a fistulotome and is to be found under this name in some of the catalogues of the 30's.

References : Hp32

Cautery and Electrotherapy

Paquelin's thermocautery apparatus

C 3



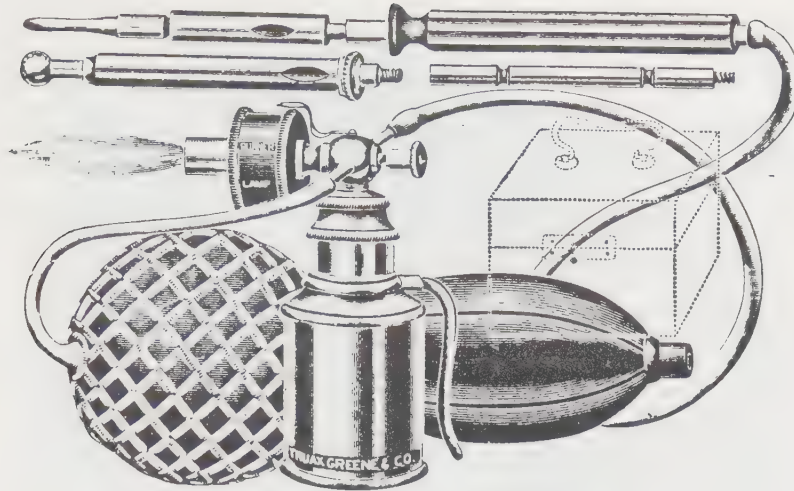
19x10x13cm metal box, containing 4,5x4,5x10cm glass vessel with silver plated top with in- and output, 7,5cm diameter bottle with wick, two handles 15 and 17cm long, the latter of ebony and ivory, two cauters of 11cm length.

The use of this instrument, which was described by the Frenchman Claude André Paquelin (1836-1905) in 1876 and works on the principle that Platinum or several other metals, when slightly heated and brought into contact with certain hydrocarbon vapours, gradually becomes incandescent and retains it's heat as long as the vapour is supplied. The apparatus consists of a spirit lamp in which the combustion chamber is first heated, air then pumped by hand into the input at the top of the benzine container and, having been saturated with the benzine, passed through a rubber tube (this and the rubber handpump have perished) into the cannulated ebony or metal handle to the combustion chamber.

Because of it's simplicity and relatively cheap price it became a fierce competitor of the Galvanocautery introduced nearly thirty years before. It very quickly came to popularity.

In the inventory of 1899 one thermocautery set is mentioned. The design of the set corresponds with the designs of many producers around the turn of the century. The ebony handle is of an earlier date of production and does not fit into this aseptic set.

References : Sch04, Ae22, 23, 19



Metal bottle, height 10cm, diameter 5cm. Top with an in- and output. Turning mechanism with three positions ("Lampe", "Stift", "Zu" meaning "flame", "burning chamber" and "off").

Called the "Simplex" burner, it was introduced around the turn of the last century as an improvement to the "Paquelin" apparatus. With this device a separate spirit lamp became necessary, as the Platinum burning chamber could be heated directly by the "Simplex" burner.

After having been used as a burner this device could act as a benzine vapour supplier, simply by turning the knob to "Stift" (= "burning chamber").

References : Ae22, 42, Sch04

Galvanocautery apparatus

C 4



19x30x22cm mahogany box. The box is covered with a marble plate on which there is an electric switch with a Bakelite knob. Scale from 0 to 8. Four plug contacts.

Inscription box: "Charles Lentz & Sons, Hospital and Physicians Supplies, Philadelphia". Inscription on scales: "Cautery 100 Amp, on top line 110 V".

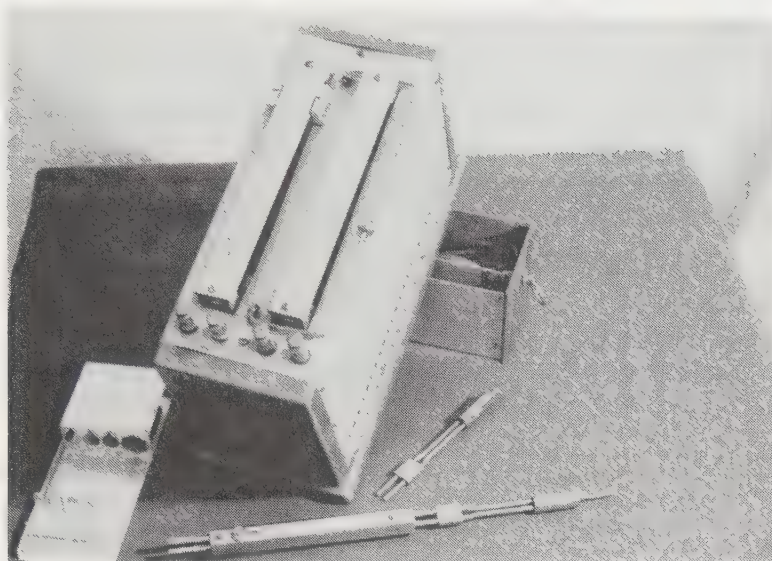
Galvanocautery means cautery with a Platinum wire heated with a Galvanic current. The dentist Heider in Vienna used this method in 1845 for the first time to destroy a toothnerve. In 1847 Crusell from St. Petersburg used it for the first time surgically for removing a Hemangioma.

At first the only current available was from large batteries and only around the turn of the century did mains current become available.

References : 23, Inv11

Edelmann's cautery apparatus

C 5



30,5x11,2x16,5cm aluminium box. On the right two dimmers marked "Kaustic" with a scale from 1 to 10, on the left "Licht" with a scale from 1 to 20, a handle, four outputs on top and a drawer containing handles and Platinum cauteries. Above drawer two further outputs with inscription: "Paquelin".

The Edelmann Galvanocautery apparatus was produced before 1945. It used to work on mains current.

"Inductotherm" apparatus

C 6



Bakelite container on a trolley. Two switches for regulation, several outputs including one for diathermy. One control lamp. Cables and cautery are kept in the drawer.

Inscription: "Inductotherm", sign of the General Electric Corporation.

This General Electric short-wave diathermy apparatus of the 1940's has not been used at Elim since 1957. A short-wave diathermic current has a frequency of between 10^7 and 10^8 Hz and sets up wireless waves with a wavelength of between 30 and 3m. It provides as deep a form of heat as any available to the operator. Inductothermy is the technical name for warmth produced by a magnetic field.

The cable is arranged in relationship to the patient's tissues, for example coiled around a leg, the high frequency current oscillates in the cable producing warmth.

The use of diathermy in cautery provided a considerable advance over Galvanocautery because the needle is cold and therefore has less tendency to adhere to the tissue and so can more easily be brought into contact with the tissue to be cauterised than a hot iron.

References : 31

Dr. Ebel's tonisator

C 7



25,5x25x14,5cm steel container with rounded corners. Battery case and switch board on which there is the "undulator" on the right side, four electric outputs on the left and the switches inbetween. The latter are labelled: "Volt", "sekundär", "primär", and "Rotation". On the side there is a hole for the winding handle of the clockwork.

Inscription: "Tonisator, Patented Dr. Ebel.R 1413"

Dr. Ebel invented his tonisator shortly before 1930; this model was made before 1931. It runs on four 1,5 Volt dry cell batteries, delivering a maximum voltage of 4,5 Volts. By means of clockwork moving a contact over 24 pins arranged in a circle undulating currents can be produced. The two basically different currents are an undulating direct current, the "primary tonisator current" and an undulating alternating current (faradic), the "secondary tonisator current". By adjustment of the rotation speed of the contact, one can obtain either frequently interrupted currents which are good for stimulation or less frequently interrupted ones being good for muscle contraction.

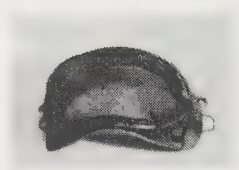
When this apparatus was purchased the indication list was extensive; today, electrotherapy is not used anymore for diseases like prostatic enlargement, frigidity or constipation but still for rheumatic and posttraumatic disorders of the musculoskeletal system.

References : 31

Anaesthesia:

Inhalation mask

A 1



9x6,5cm metal mask with a detachable wire front on a metal frame.

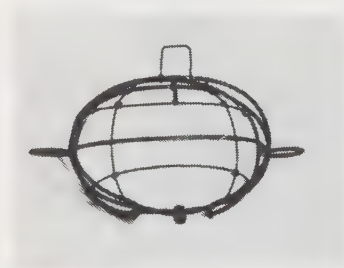
Inscription: "M. Schaerer AG, Bern"

This mask was used at Elim up until ten years ago for general anaesthesia whereby two parts Ether and one part Chloroform after induction with Ethylchloride was administered. It's origin might be non-anaesthetical as it resembles the mouth mask used by the surgeon during operations, constructed by Prof. Hermann Matti (1879-1941), who was the successor of F. de Quervain (1868-1941) as Professor of surgery in Bern.

References : 22, IJ

Kocher's Chloroform inhalation mask

A 2



11x8cm metal wire mask, detachable front.

Prof. Theodor Kocher's (1841-1917) mask was commonly used in the 1900's. Around this time Chloroform became more generally used than Ether after it's introduction in the 1850's as it was simpler to use and Ether, at that time, was often too impure. Later Chloroform lost it's popularity again because of it's narrow margin of safety.

References : 16

Esmarch's Chloroform inhalation set

A 3



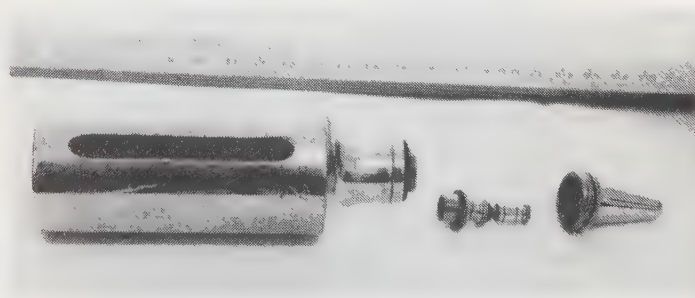
17,5x10x8,5cm pear-shaped leather case with leather lining, containing a wool-covered wire inhalation mask, 1 brown glass drop bottle, a cork with an in- and output, a 13,5cm tongue forceps.

This mask, named after Friedrich von Esmarch (1823-1908) who described it in 1877, is a modification of Thomas Skinner's mask of 1862.

References : 40, Ae22, Sch04

Drop bottle

I 9



14,3x3,9cm metal bottle, nickel-plated, with amber glass window, graduated. Leather washer, safety drop mechanism.

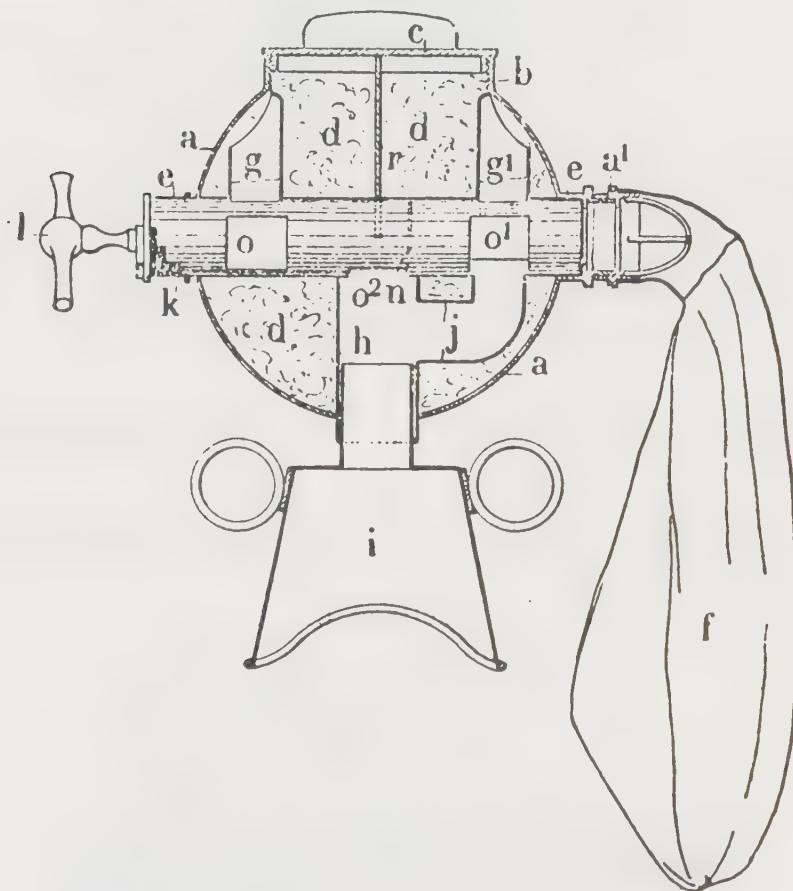
Inscription: "DRMS" and on base "GENSURCO REG^D"

Drop bottles for anaesthetic fluids were produced in many varieties. They were all graded in drachms (1 drachm = 3.4ml). The safety mechanism of the 1930 Symond's drop bottle prevents too much fluid being dispensed.

References : A&H30

Ombredanne Ether inhaler

A 4



24,5x20x14cm wooden case with brass handle.

Inscription: "W. Margot & Cie., Lausanne Riponne. Instruments de Chirurgie". On the apparatus: "Collin, Déposée No.5319". On lid of apparatus: "S.G.F.8^{TE}S, G.D.G."

Ombredanne described his own apparatus: "A sphere filled with Ether impregnated sponges" (this specimen contains felt).

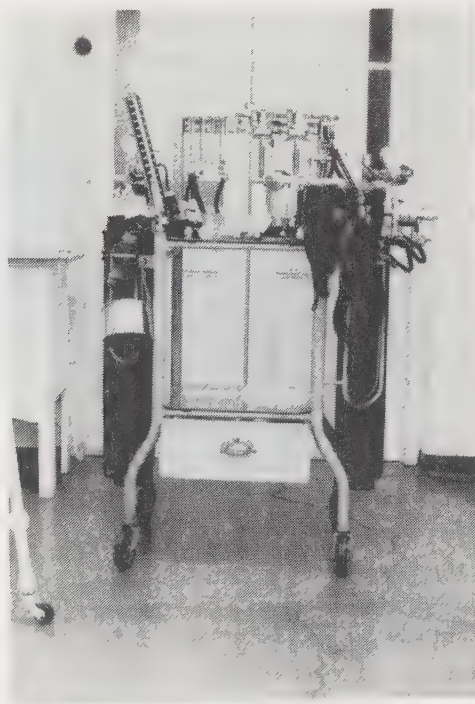
"It is traversed diametrically by a tube closed at one end by a "baud-ruche" sack (caecum of cow or pig): the other end is open to the surrounding air by a stepped opening (K in Fig.). On to this tube open (1) two "chimneys" passing into the generator, (2) a tube H to the face mask and (3) a return tube J between the mask and the transverse tube. In the transverse tube a second hollow tube rotates. This tube is closed at N and pierced by windows 0, 01, 02 of which 0 and 01 open progressively and 02 is always open. The movements of this tube are shown by an index graduated from 0-8."

Louis Ombrédanne (1871-1956), a Parisian surgeon with interests in paediatrics and plastic surgery, published a paper on his inhaler in 1908. The main principles of this apparatus are that fresh air can be introduced to the inhaled gas without the lifting of the mask being necessary, and that there is a rebreathing bag from which exhaled gases can be re-used. Ombrédanne said: "It is difficult to explain the need to breathe a relatively restricted mixture. Does the re-breathing bag permit the concentration of Ether or does the inhalation of a certain amount of carbonic acid (gas) increase the narcosis? Concentration of Ether vapour is insufficient for good anaesthesia. It is necessary therefore to admit that carbonic acid expiration plays a useful role in anaesthesia."

References : 10

Boyle's apparatus

A 8



Fourwheel trolley with 2 glass shelves and one drawer.

Fixed on the frame are four rotameters, one for Oxygen with a scale from 100 to 5000 CCS/minute, one for CO₂ with a scale from 100 to 2000 CCS/minute, one for C₃H₆ with a scale from 50 to 750 CCS/minute and one for N₂O with a scale from 1 to 10 L/minute.

Inscription: "Coxeter, Kind.Medcl.Sectn.BOC". Two containers marked: "Chloroform or Trilene" with markings from one to four ounces and "Ether" with one to ten ounce markings. One Fluothane apparatus, inscription: "Fluotec Mark2.Fluotec, Cyprane Ltd., Keighly England, Serial No.51705".

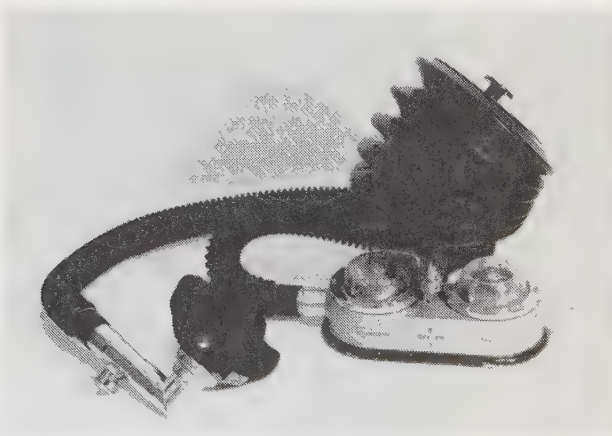
The first Boyle apparatus (Henry Edmund Gaskin Boyle, 1875-1941) was presented to the Royal Society of Medecine in 1918. The different parts can easily be put together, therefore they could be of different ages. The fact that there are rotameters instead of the previously used dry bobbin flowmeters indicate a production date of these parts after 1937. This anaesthesia apparatus is still used at Elim hospital for occasional VIP operations in the old operating theatre in the VIP section.

Trilene, a volatile liquid, was introduced as an anaesthetic agent in 1934. It's use in obstetrics declined since portable inhalers delivering nitrous oxide mixed with an adequate amount of Oxygen were developed.

References : 10

Oxford inflating bellows

A 5



Bellows, rubber tubing, rubber mask and valve container with inlets for Oxygen and for anaesthetic gas and an output for the patient.

Inscription: "Oxford inflating Bellows Serial No.1439, Reg.Des.No.8689"

These bellows were bought in 1960 and were used for positive pressure breathing in maternity.

References : IJ

The Sparklet resuscitator

A 7



19,8x12x3,7cm black cardboard box. Injecting pistol with fixation mechanism for one "Sparklet" CO₂ bulb, a rubber balloon to be filled with the gas from the bulb, an output to the patient and a trigger. Pamphlet for directions for use.

Inscription: "The Sparklet Resuscitator Model C". Inscription inside box: "Manufacturers: Sparklets Limited, Edmonton London N18".

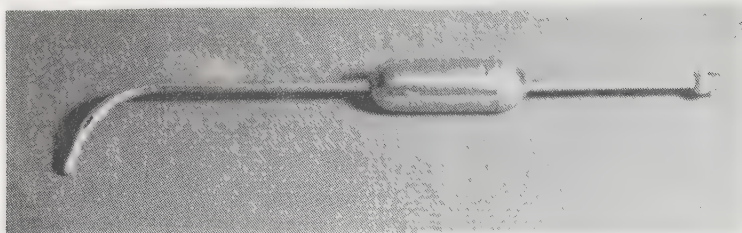
The "Sparklet" brand of CO₂ pressure bulbs was known to the public since 1909 for producing sparkling water in the household. During the 1930's some authorities recommended the addition of CO₂ to the gas during resuscitation to stimulate the respiratory centre; this idea gained some popularity but remained controversial. J. Adriani wrote in 1947: "Do not add carbon dioxide to the Oxygen mixture. The use of CO₂ for respiratory failure is a controversial subject. Do not worry if it is not available. O₂ is the gas which must be introduced into the alveoli."

According to the pamphlet this particular model must be older than 1939; it was available from A&H up to 1953.

References : 1, 37, A&H53

Marshall Cowell Mucus Evacuator

A 11



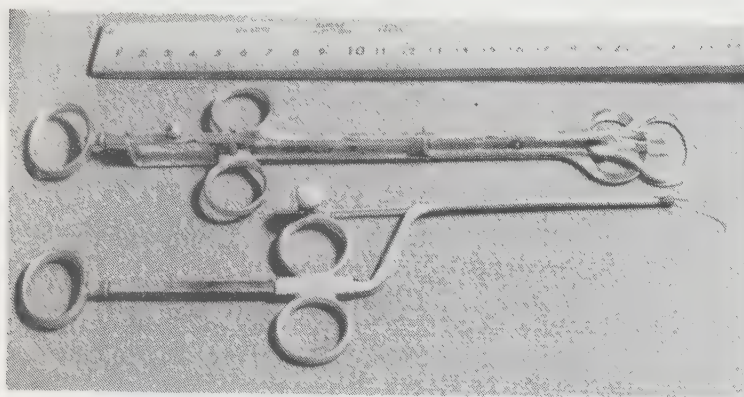
27cm suction tube with receptical for wool.

Inscription: "crest"

This instrument is still used by Dr. Jaques for oral suction of babies post-natal.

Ear, Nose and Throat Surgery:

Mathieu's tonsillotome



I 25

I 26

24,5cm double action instrument with two rings moving against each other and little arrows piercing the severed tonsil.

Inscription: "Niser 2nd Model Mathieu"

This tonsillotome was invented in the last century and was very popular in the 1920's; it was produced with many modifications, among others by v. Bruns in 1893 and later Aesculap.

Philip Syng Physick (1768-1837) of Philadelphia designed an instrument in 1828 which is the forerunner of all tonsillotomes. Willian B. Fahnestock introduced a guillotine with a prong or fork to catch the tonsil, which in a modified form became known in France as "Mathieu's guillotine" and maintained it's popularity up to the first years of the present century.

During the first years of the 20th century the principle was recognised that if disease is to be eradicated by tonsillectomy the tonsils must be removed completely. With the guillotine this could only partially be achieved, consequently new methods of tonsillectomy followed. In 1909 G.E. Waugh published his method of methodical, blunt dissection of the tonsils, using dissecting forceps and snare and tying off bleeding points; by this method the pillars of the fauces are not damaged and inhalation of blood-clots is avoided.

References : 41, 44, Sch04, Ae22, Ma95, KS78

Glegg Snare

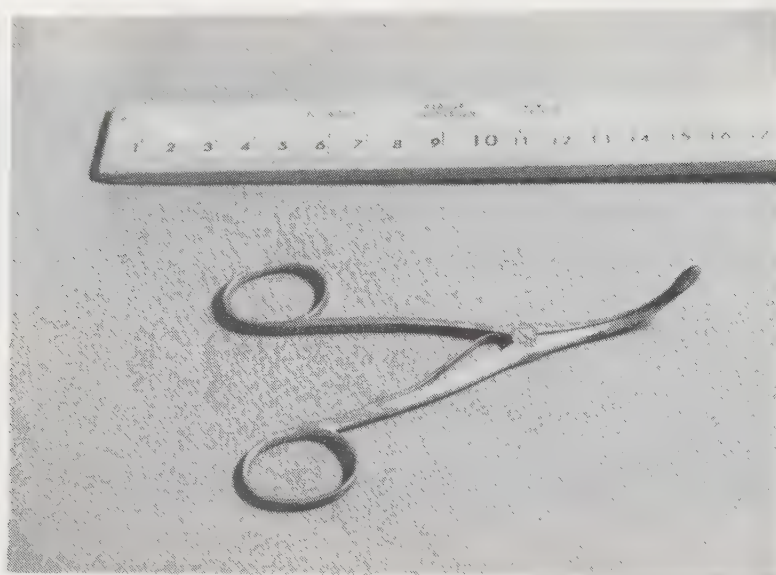
I 26

22,5 cm snare.

This instrument is also used for tonsillectomy. The sling at the end is put over the tonsil and pulled into the handle cutting the tonsil.

Trousseau's trachea dilator

A 10



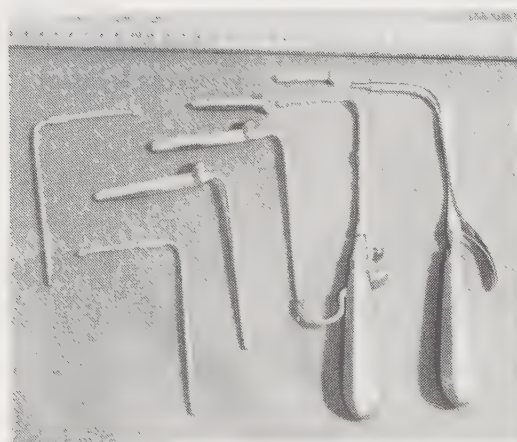
11cm dilating instrument with blunt distal end.

Inscription: "Lüer"

Listed in the Wülfing-Lüer Catalogue without illustration, named after Armand Trousseau of Paris (1801-1867).

O'Dwyer's laryngeal tubes

I 21



6 tubes of different sizes, inscription nos. 1,2,3-4,5-7,8-12,13 and angulated instruments for inserting and removing them.

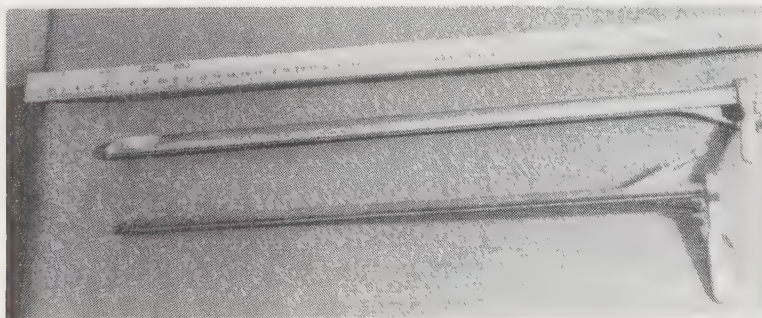
The American Joseph O'Dwyer (1841-98) devised these tubes in 1885. They were inserted into the larynx to relieve obstruction caused by diphtheria in children. The design of these instruments is very similar to the one in the Allen and Hanbury Catalogue of 1925. They are not mentioned in the available inventories unless they were among the "Instruments divers pour opérations de la gorge et du larynx" donated by a Dr. R. Gondoux, mentioned 1911.

Before the days of antitoxin, diphtheria was very prevalent and very virulent. The larynx was often attacked and such cases were always fatal unless tracheotomy was done. In the pre-antitoxin days laryngeal diphtheria had a mortality rate of about 70 percent. If the child did not die of diphtheria, he was usually doomed for life to wear the silver tube in his neck in order to breathe because his larynx was closed by the scar tissue that followed the self-limiting diphtheric disease.

O'Dwyers method had the advantage that it was non-invasive and that the wearing time for such a tube was usually a matter of two weeks or less.

References : 26, 34, 41, 44, Ae22, A&H30

Chevalier Jackson oesophagoscope, standard model



I 12

I 13

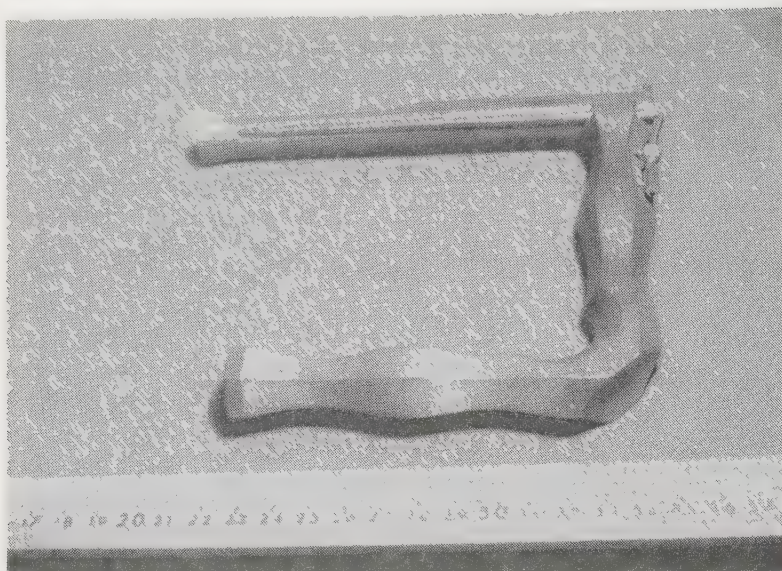
45cm tube of 1,1cm diameter, rectangular handle, distal lighting.
Inscription: "Genitourinary London"

Chevalier Jackson aspirating bronchoscope, standard model

40cm tube of 8mm diameter, rectangular handle, distal lighting, lateral breathing holes, aspirating canal in the wall opposite the lamp.

Chevalier Jackson's Laryngoscope

A 9



12,5x13,5x16cm brass, U-shaped laryngoscope with slide panel and distal lighting.

Inscription: "PILLING-PHILA USA J 1088.No 16"

This laryngoscope was available from A & H between 1930 and 1953 and from Down's up to the 70's. It has not been used at Elim since 1956.

In 1868 Kussmaul of Freiburg, using Desormeaux's urethroscope, was the first to perform direct oesophagoscopy. A sword-swallower was employed for demonstrations and, using the sword-swallowing position, his pupil Müller showed that a rigid tube 13mm in diameter could be introduced safely into the normal oesophagus.

Von Mikulicz of Vienna, who was familiar with Kussmaul's experiments, designed a practical oesophagoscope in 1881. This consisted of a straight, rigid tube with a slanting distal end illuminated by means of an interior platinum wire. This and his anatomical, physiological and pathological investigations on the oesophagus form the basis of today's practical knowledge of oesophagoscopy. Gottstein of Breslau in 1891 fitted an extra tube for suction and employed cocaine for local anaesthesia before insertion, while Rosenheim of Berlin improved the method of illumination in 1895.

In 1895 Kirstein of Berlin, holding the patient's head extended and the tongue and epiglottis depressed, using a flat spatula and Casper's prismatic incandescent lamp (used in oesophagoscopy by Rosenheim) was able to see the interior of the larynx and examine it directly for the first time.

Gustav Killian of Freiburg, called "The Father of Bronchoscopy", impressed by the work of Kirstein began in 1895 to devote his whole time to endoscopy and adapted the oesophagoscope to the direct examination of the trachea; he showed that direct examination could be extended to the bronchi, though von Hacker is said to have been the first to introduce a rigid examination tube into the trachea in 1902.

Brünings of Jena, who had been Chief Assistant to Killian in Freiburg, made some notable advances in the instrumentarium and teaching of proximal-lighting endoscopy, as in later years did Haslinger of Vienna.

Einhorn of New York designed the distal lighting of an oesophagoscope in 1902. In 1904 Chevalier Jackson of Philadelphia (1865-1958) improved the distal lighting principle, designed a bronchoscope with a suction tube as well as with a light carrier and attached a useful right angled handle to the endoscope tubes. Stimulated by the mechanical problems presented by the removal of foreign bodies from the bronchi and oesophagus, Chevalier Jackson developed the largest clinic and school of endoscopy on either side of the Atlantic.

These instruments must be dated 1930.

References : 17, 26, 41, 44, A&H30, A&H53, SM26

Oesophageal bougie and coin-catcher

I 29



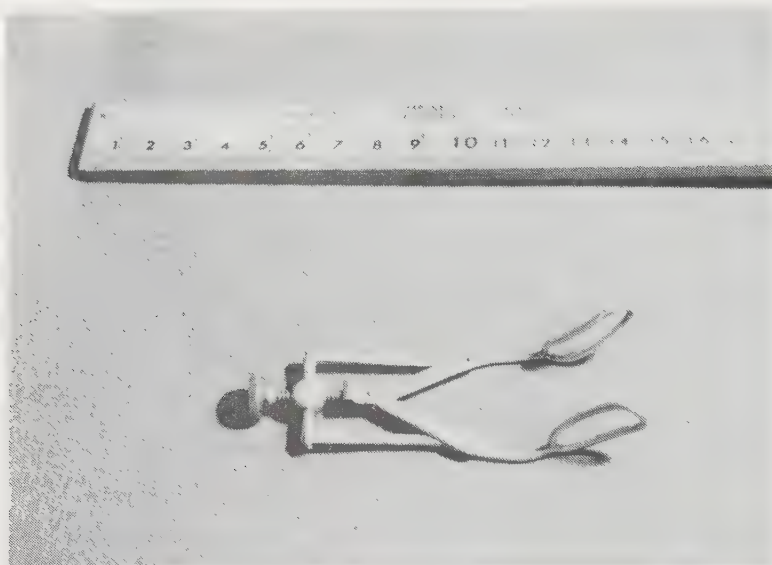
57x3,5x3,5cm wood case, containing a 38cm whalebone rod with a mobile double scoop on one end and a celluloid olive at the other. Nine olives of different sizes from 8 to 15mm diameter.

Mathieu named the bougie after Trousseau in 1895 and the coin-catcher after Graefe; at this time the olives were being made from ivory, only later were they made from celluloid like those from Aesculap in 1922.

References : Ma95, Ae22, A&H53, Inv. II, 8

Fränkel's rhinoscope

O 9



9,8cm spreader instrument.

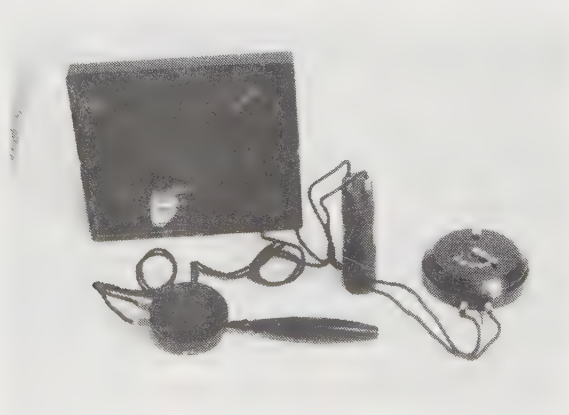
Inscription: "F. HAJEK"

This rhinoscope is named after a German physician from Berlin, Albert Fränkel (1848-1916)

References : HsEx, Ae22

"Acousticon" hearing aid

D 1



17,7x7,5x5cm black wooden box, leather handle.

Inscription: "General Accoustic Company, 6, rue de Hanovre, Paris"

Contents : 1 round Bakelite container with inscription "Type No.16272. Fabriqué en France par General Accoustic Company. Breveté SGDG France Etranger". On back: "Accousticon". On the top there is a switch mechanism.
The box can be connected to a battery and also to an ear piece which has a detachable handle and an "on/off" switch.

The "Accousticon" is in fact a telephone apparatus, the round box being the receiver, the battery the power source and the earphone. Graham Bell had already invented the telephone in 1876; by 1900 Ferdinand Alt of the Politzer Clinic in Vienna used this invention as the first hearing aid. In the 1920's it was introduced to the public, but this type of hearing aid never became immensely popular due to the rather complicated set up in three pieces, it's lack of power and the frequency of technical breakdowns and interferences.

In 1932 Hugo Lieber used the sound conduction property of bone to construct a hearing aid which had a vibrator held to the mastoid bone by a headpiece.

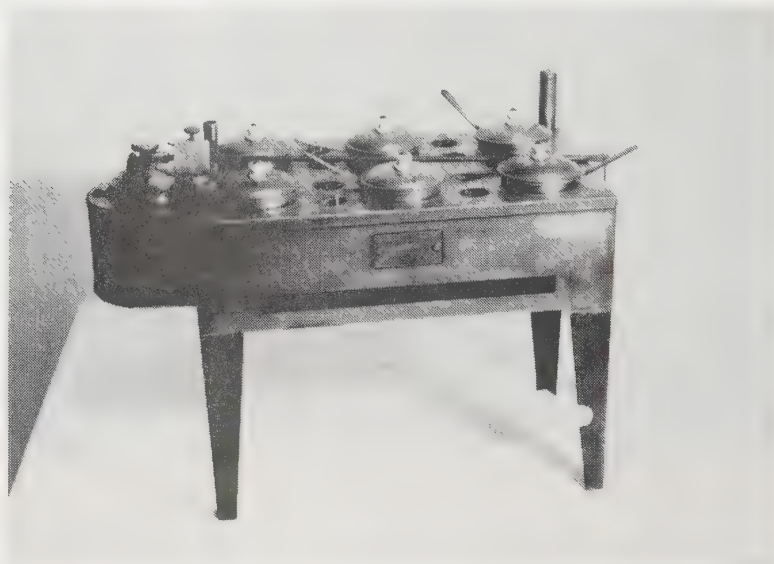
References : 31, 41, 44

Laboratory, X-ray and Pharmacy

Dr. Augsburgers histology equipment:

Paraffin embedding bath

L 4



26x32x20cm brass and copper container with steel legs, six pans with lids and openings for eight test tubes. On the left a temperature regulating capsule with an arm.

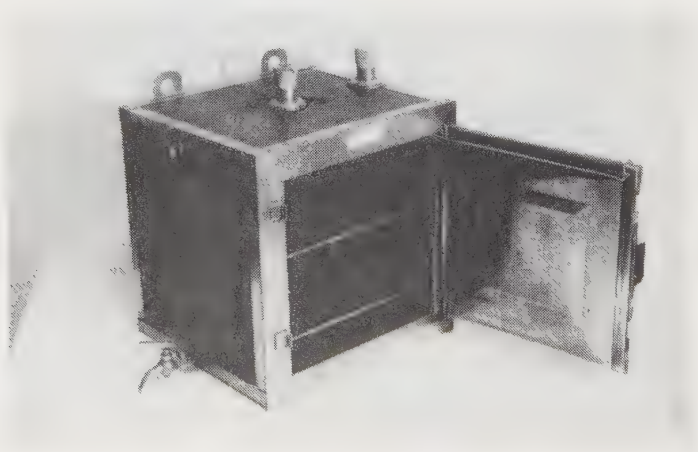
Inscription: "Chas. Hearson & Co. Ltd., 235 Regent Street London W"

This oil heated Paraffin bath with patent regulating capsule was sold by many British suppliers during the 20's and 30's.

References : A&H30, IS, Inv21

Incubator

L 3



26x26x24cm double-walled brass box with linoleum insulation.

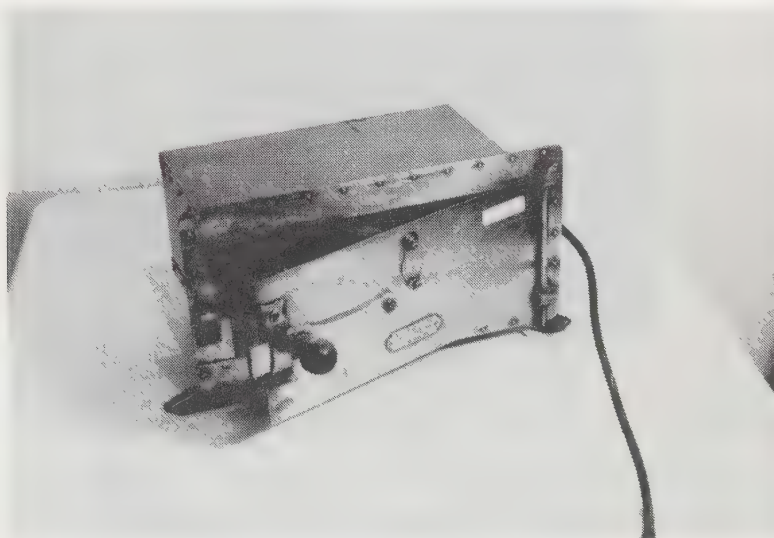
Two openings, one is connected with the inside container and is for the thermometer, the other is for filling the insulation-coating with water. On the left side, tap with missing glass tube which was meant to indicate the water content.

The "universal apparatus" could be used as incubator or to prepare Paraffin for embedding histrological specimens. It dates from 1922. The gas heating appliance is missing.

References : Inv21, Ae22, IS

Hot air oven

L 5



33x19x16.5cm copper container with ornamental feet, electrical heating.

Inscription: "P. Lqueux, Ingénieur des Arts et Manufacteur, 64 R. Gay Lussac, Paris". Inside there is a little label with the note: "Etuve de Dr. Verrey".

References : Inv21

Slide cupboard



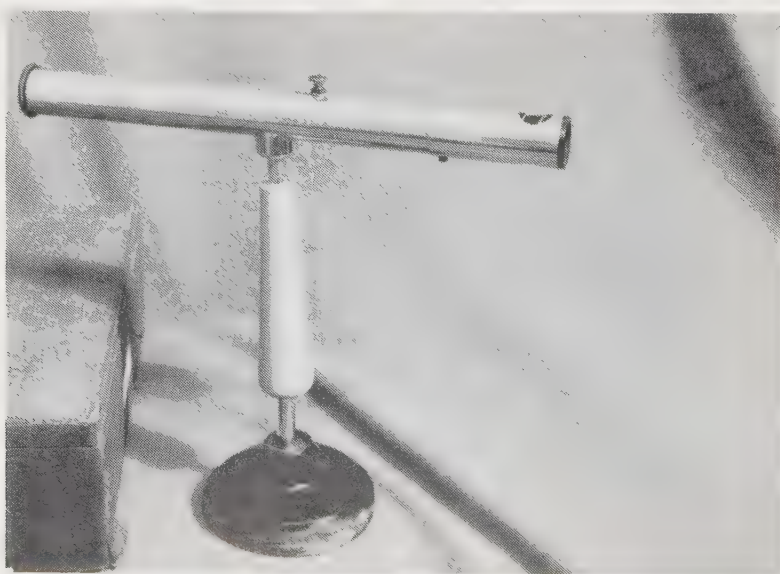
Wood cupboard with drawers containing microscopic slides.

This is the slide collection started by Dr. Augsburg. Nowadays the histological specimens are prepared in Pretoria.

References : IS

Spectroscope

O 3



Tube with eye-piece mounted on handle, the opposite end to be held towards the light, has a hole for a test tube.

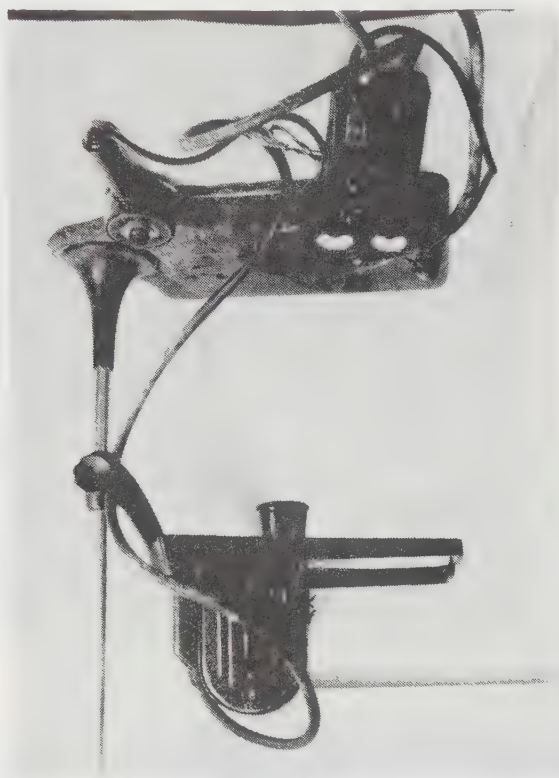
Inscription: "Hans Heeler, Berlin"

Spectroscopes like this were used for proving traces of blood pigment in the urine and in colloid suspensions of stools. A test tube with the fluid was fitted into the spectroscope, which was held against a light source. If there was pigment in the fluid a specific pattern of absorption lines was visible. Spectroscopes like this were available from several manufacturers after the beginning of this century.

References : IS, 38, HsEx

X-ray unit

X 2



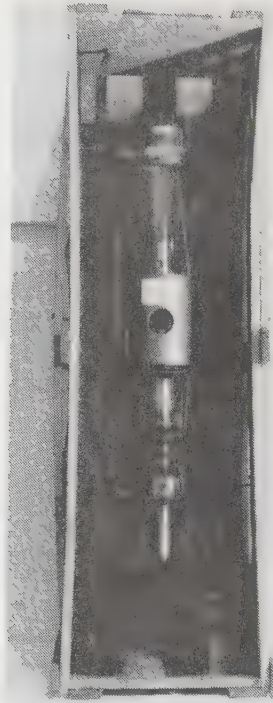
53x36x21cm case, containing "Model F3 shockproof X-ray unit" of the General Electric Corporation. Inside the case lid is an instruction leaflet showing that it was copyrighted in 1937.

The reports speak of a new X-ray unit put to use in 1935. This one was in use up to 1960.

References : 13

X-ray tube

X 3



84x25,5x24cm wooden container with 58cm X-ray tube fixed into it by eight springs.

Inscription: "Aluminium Gleichwert der Glaswand min. 0,7mm. Nach DIN 2/1933§12 kein weiteres A1.filter nötig."

This X-ray tube was delivered in 1946, insured for £130 Sterling, but for unknown reasons has never been used.

Negatoscope

X 1



40x41x27cm Mahogany box with one electric bulb inside and dimmer on the left side.

This X-ray screen belongs to the original X-ray equipment which was mentioned in the inventories of 1914, although these were not yet ready for use.

References : Inv14

Pharmacy stool

P 1

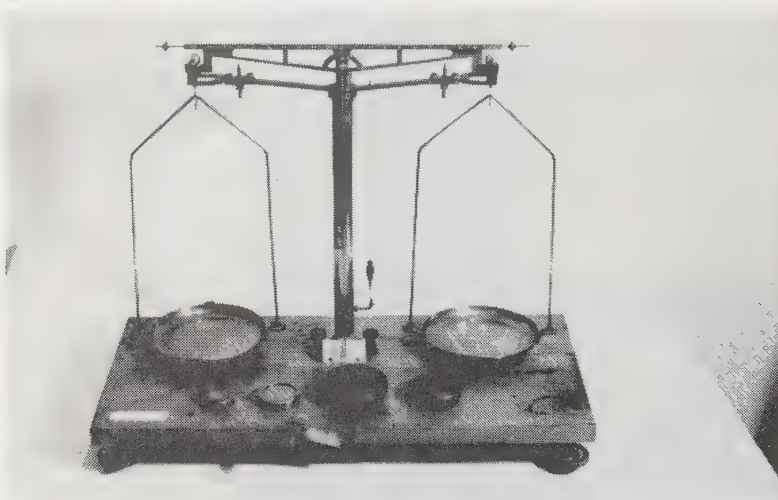


55cm wooden stool, seat covered with animal skin.

Label with inscription: "first Pharmacy stool"

Pharmacy scales

P 2



39x32x19cm brass pharmacy scales.

Inscription: "Heynes Mathew Ltd., Cape Town"

The design of these scales was very common and produced over a long period. These scales were used at Elim up to 1978.

Neoarsphenamine vials

P 3



Orange cardboard box, containing nine vials each containing an orange powder.

Inscription: "Novarsenobillon (Trade Mark): Neoarsphenamine 0,75gm
poison Division 1, Import licence No. 30, Batch No. 04961, Maybaker
(SA) (Proprietary) Ltd., Johannesburg"

In 1909 success against Syphilis was achieved with Salvarsan or Arsenphenamine prepared by Ehrlich's Chemist, Bertheim. In 1912 a more convenient compound, Neoarsphenamine was prepared.

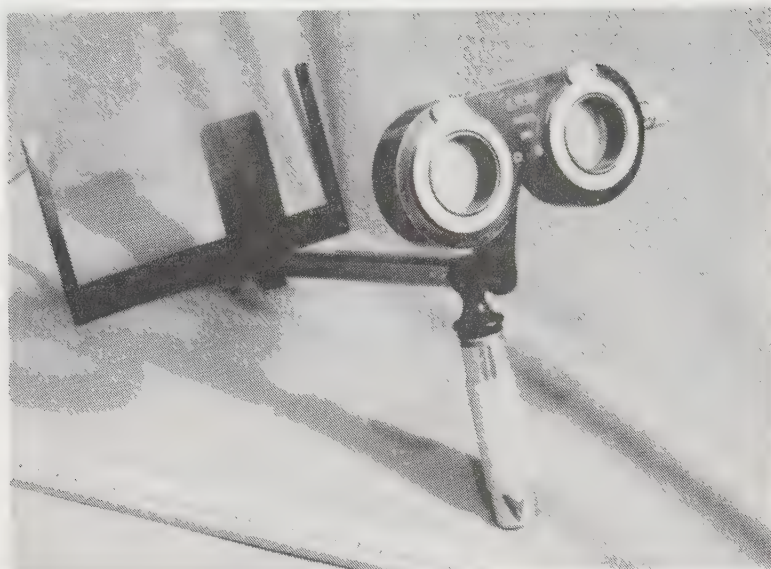
These arsenicals were introduced very rapidly. While not without shortcomings, Neosalvarsan remained a standard treatment for Syphilis until effective antibiotics were introduced in the 40's. The first time Salvarsan was mentioned in the inventories was in 1911. Dr. Liengme states in 1906 that 50-60% of all black patients had Syphilis.

References : Inv11, 29 25

Ophthalmology

Stereoscope

O 1



34,5x16,5x13cm wooden box containing optical instrument.

Inscription: "S.O.M. Paris, No. 11"

In 1861 Oliver Holmes invented the stereoscope, which was widely produced nearly unchanged up to our times. The Pulfrich stereoscope of 1924 is similar.

References : 21

Perimeter

O 2



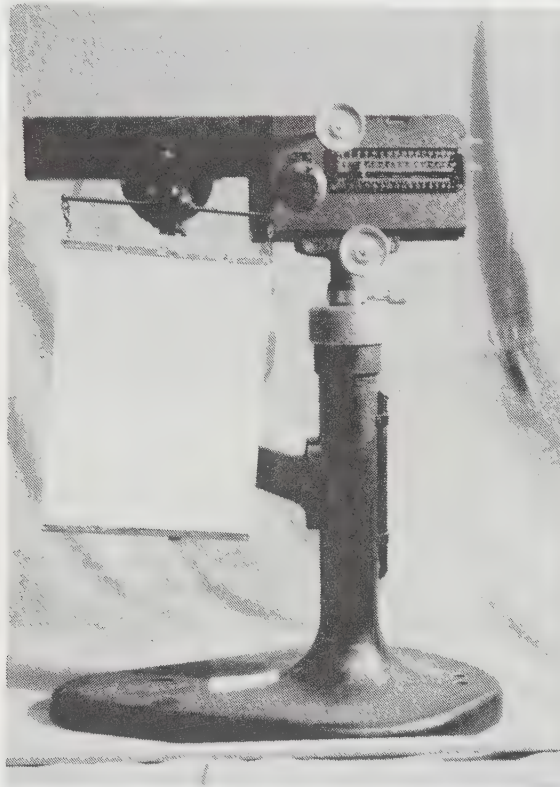
Black cast iron stand with semi-circular screen for turning, with which the visual field can be tested as plastic pins are pushed forward so that they appear on the screen.

The perimeter was invented in 1857 by Aubert. Förster invented the name perimeter. This particular perimeter was presented to the hospital by an optician and was used until recently.

References : 21, IS

Kühl's refractometer

O 4



42cm refractometer

Inscription: "R. Rodenstock, München, DRP No. 368309110. No. 147."

The basic concept of this refractometer was patented in 1922. With few modifications it was produced until 1971. This one is an early model and has not been used at Elim since 1956.

References : 21, IS

Elliot's trephines

O 8



8,3x2,8x2,5cm wooden box, handwritten inscription: "Elliot's trephine for sharpen & repair". 6,6cm handled trephine, inscription "2.2". 5,9cm trephine, inscription: "Grieshaber", two cannulas 2,6cm.

Trephination after Robert Henry Elliot (1864-1936) consisted of perforating the sclera to drain intraocular fluid (aqueous) in order to lower intraocular pression in glaucoma. It is now obsolete.

References : IS

Ophthalmic instruments

O 5



16,4x11x2.4cm black wooden box, red velvet lining.
Inscription: "J. Weiss & Son, 287 Oxford Street London W".

13cm Pterygium knife, 13,6cm angular keratome, 12,2cm straight spud, 12,4cm curved spud, inscription: "rostfrei", 13cm straight spud, inscription: "Laubscher", 2 scalpels of 12,5 and 14,1cm, one 12,1cm grooved needle and one 12cm swab holder.

The instruments are all from different manufacturers and of different ages, all relatively new.

References : IS

Ophthalmic instruments

O 6



16,5x6,7x2,6cm wooden box, inscription: "Allen & Hanburys Ltd., 40 Wigmore Street, London W". 13,8cm angular keratome, inscription: "Moria", two 13cm straight keratomes, inscription: "Lüer", one 13,8cm straight keratome "257", two irrigation cannulas of 3 and 4,9cm, one 11,4cm lens hook "Grieshaber" and one 11,2cm sharp spoon shaped spud.

Like O5, relatively new instruments from different manufacturers.

Snellen's entropion forceps

O 7



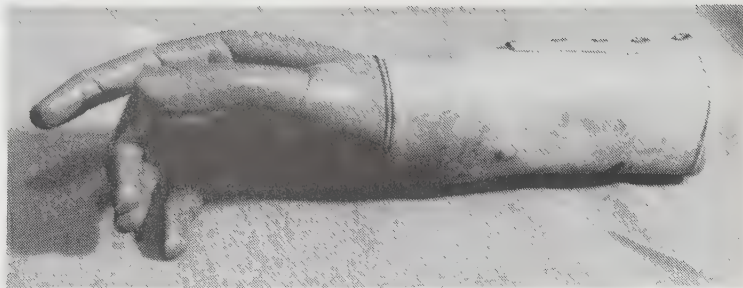
10cm adjustable forceps with horn shield.

These forceps were invented by W. Snellen (Utrecht, 1834-1908) and available from many manufacturers for a long time.

Sundries

Prosthesis

M 1



32,5cm wooden prosthesis, painted brown, short leather cuff. Mobile finger joints.

This hand prosthesis has never been used. Assessing the age is quite impossible; the art of producing elaborate appliances is quite old. Already in the last century similar models were available. This one was certainly for decorative purposes only, as the cuff is too short to provide any reasonable support for using the hand.

Scarificators and cups

C 1



33,5x22x23,5cm wooden box with ornamented iron handle, containing 29 glass cups and two brass scarificators of 4,5x4x3,7 respectively 4,5x4,2x3,2cm.

"Blood letting" was practised by doctors throughout the 19th century, although its use declined and became limited to particular conditions such as pneumonia and pleurisy. The glass cups were heated, placed on the skin and allowed to cool so that blood was drawn from the wound made with the scarificator. The scarificator works by releasing several blades held by a spring mechanism so that they cut the skin. Sets like this one were produced by all suppliers of medical equipment for a long time. There are cupping glasses and one scarificator mentioned in the 1899 inventory.

References : Inv99, Sch04

L. v. Muralt's apparatus for producing artificial pneumothorax L 7



73x27,5cm wooden board, on which there are fixed two 1000cc tubes, one U-shaped tube in the middle, two two-way taps and one filter unit on the left, one three-way tap on the right. Connecting rubber tubing is missing.

Inscription: "M. Schaerer AG Bern"

Dr. Ludwig von Muralt lived from 1869 to 1917; being originally a psychiatrist and having obtained a lectureship of forensic medicine at the university of Zurich in 1900 he was forced by the outbreak of pulmonary TB to go and work in Davos, where he was superintendent of the sanatorium in Davos Dorf from 1905 to 1917.

He devised his first pneumothorax apparatus about 1909; this is a revised version and somewhat more refined. This particular model was ordered from Schaerer's in 1938.

Before the invention of tuberculostatic drugs nitrous oxide was the method of choice for producing an artificial pneumothorax in unilateral pulmonary tuberculosis. This apparatus made it possible to control both the gas pressure and that of the pleural space and thus estimate the amount of gas to be introduced to the pleural space. The method was first described by Forlanini in 1882.

References : Hs18, Hs33, 35, Wi12, 13

Oxygen spectacles

A 6



Spectacle frame with rubber nozzles for the nostrils. Rubber tubing.

In A & H 1953 mentioned as Tudor-Edwards spectacles.

References : A&H53

Dental chair

F 2



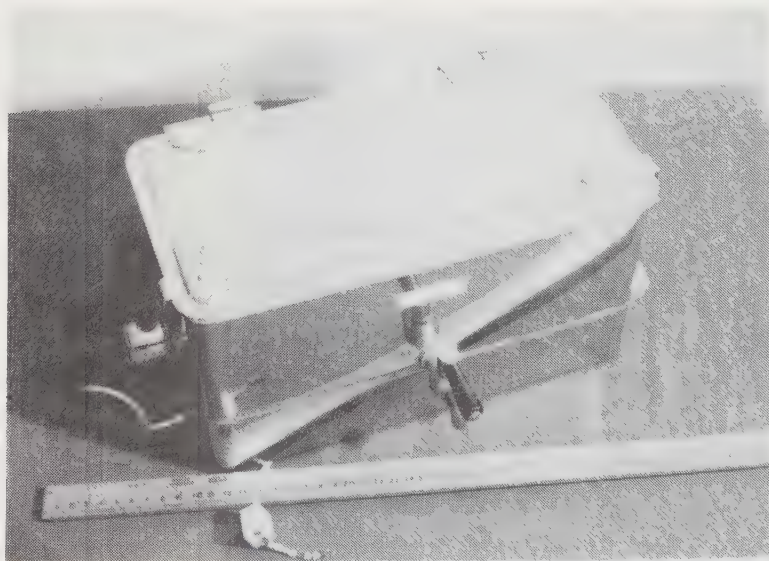
Cast iron dental chair with hydraulic pump mechanism and leather covered seat, back-, arm- and headrests.

This chair was donated by a dentist from Louis Trichardt and was in use at Elim from 1964 to 1981.

References : IJ

Instrument sterilizer

L 6



31x17x16cm steel container, electrically heated, Bakelite handles on both sides, tap with Bakelite handle.

Vertical autoclave

L 1



111x35cm autoclave, wooden handles, safety valve, tap, pressure manometer. Single walled. Paraffin burner missing.

This autoclave must be dated between 1920 and 1935. It worked with a pressure of 2,5 atmospheres and a temperature of 138⁰C.

Vertical autoclave

L 2



94x25cm autoclave, wooden handles, Bakelite tap knob, safety valve, pressure manometer, scale to 5kg/cc.

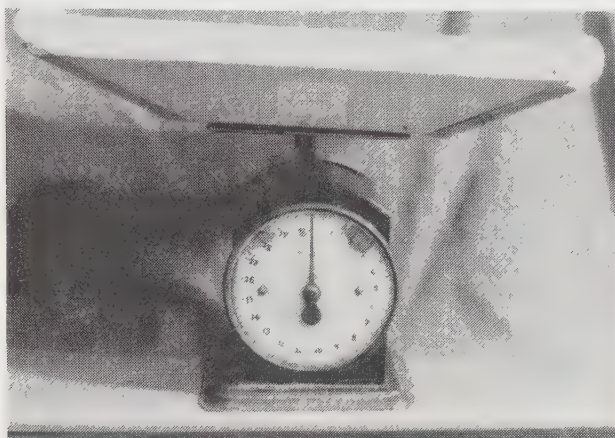
Inscription: "Sanitätsgeschäft m. Schaerer AG Bern"

This small autoclave must date from about the same time as L1. It was used up to 1956 for autoclaving culture mediums in the laboratory. The single walled autoclave was developed from the Pot of Papin.

References : IS

Hughes family scale

N 2



17,5x28x13cm metal case, dial of white enamel. Screw for adjusting dial to zero. The baby trough is homemade.

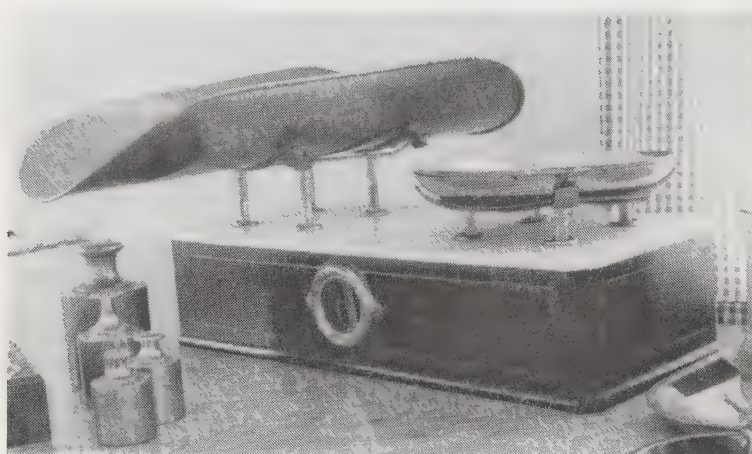
Inscription: "Hughes family scale No. 28, British made, Salter"

In the same catalogue as N1 this scale was also mentioned. It was in use at the Valdezia Clinic up to 1982.

References : SM25, SM26

Infant weighing scale

N 1



58x13x25cm ebonised case, marble top, control window with two arrows, brass trays for baby and weights. The weight is given metrically.

Inscription: "Portée 45 Kilog."

In the catalogue of the Surgical Manufacturing Company in use before 1925 the trays were circular and the scale listed under "Scales, counter, French pattern". These were still in use in 1983.

References : SM25, SM26

Aspirateur Tourtier

N 6



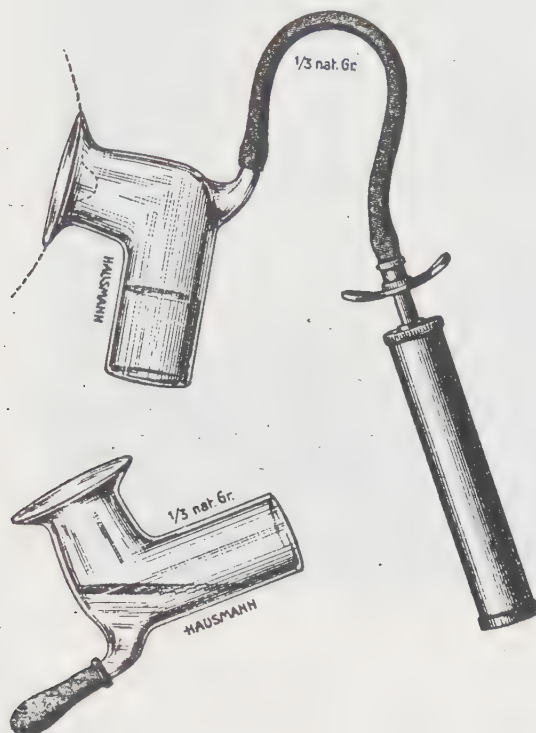
22x6x7,3cm cardboard box, containing a 19cm glass pump with an aluminium cap and a rubber plunger.

Inscription box: "Aspirateur Tourtier, 10 rue du Regard, Paris 6. Prix fixe: 15fr.75" and a pictorial advertisement on the lid.

According to the design in the picture on the box and the fact that there is a rubber stopper, this pump must date early part of this century.

Primissima breast reliever

N 5



17x6,5x10cm cardboard box with instructions to use in French.

Inscription: "Pompe à lait Primissima. Hausmann S.A.".

14cm suction pump, inscription: "original primissima, ges. gesch." with a box full of glass suction cups.

Hausmann of St. Gallen produced this model from 1918 up to 1933 when they introduced a model with two rings enabling the mother to work the pump with one hand only.

References : Hs18, Hs33

Commode

F 1



Commode chair, steel painted white with lid and armrests.

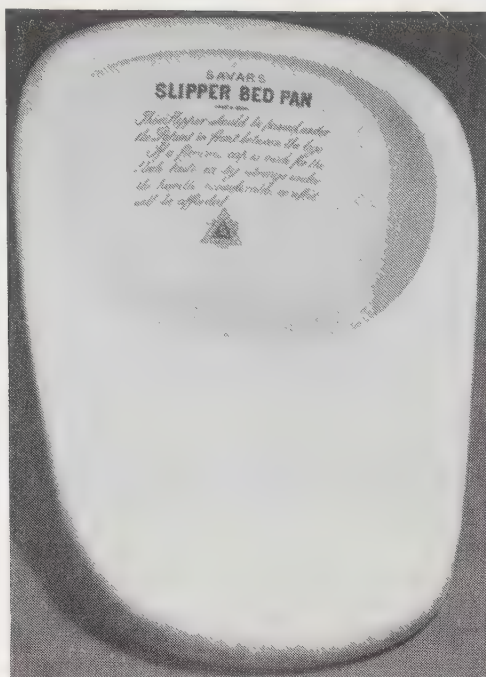
Inscription: "The Surgical Manufacturing Co., Mortimer Street London W"

The commode dates from the 1920's and was used until recently in the X-ray department after Barium enemas.

References : SM25, SM26

Slipper bed pan

N 4



15x20x34cm porcelain bed pan.

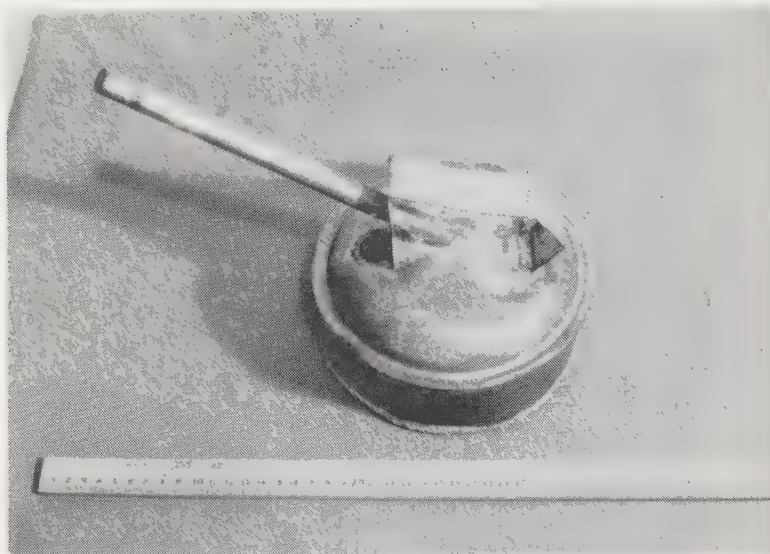
Inscription: "Savars Slipper bed pan. This slipper should be passed under the patient in front between the legs. If a flanel cap is made for the blade and fastened by strings under the handle considerable comfort will be afforded."

The slipper was introduced at least by 1836 and is often colloquially referred to as "The Liverpool". This is an early 20th century model.

References : 15

Bronchitis kettle

N 3



11x18cm tin kettle with handle, tube and input.

Cheap bronchitis kettles like this one were on sale during the early years of our century. This model is similar to one in the Wellcome Museum, which is from the year 1910. The funnel with water and medication, the extension tube and spreader are missing.

References: Ar95, D00, A&H30

C O N C L U S I O N S

This selection of surgical, medical and paramedical instruments provides an insight into the life of Elim Hospital since it's foundation 86 years ago. A nice view of the development of anaesthesia and general surgery is offered and traces of forgotten procedures such as the obstetrical embryoclastic operations or artificial pneumothorax are found. One becomes aware of the tremendous spectre a missionary doctor used to have or still has; where nowadays can a hospital be found where the same doctor practices such a wide range of operative procedures as cystoscopy with ureter intubation and all obstetrical operations, covers the whole field of ambulatory and clinical general surgery and internal medicine as well as making his own histological slides? The presence of histological equipment and very expensive pre Second World War urological instruments might be explained by the great distances from the nearest specialist hospital or by personal preferences of the superintendents; another explanation would be that some of the instruments were just donations from Europe and were never used in Africa.

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ABBREVIATIONS

- Ae22 Aesculap, Jetter und Scheerer, Illustriertes Hauptmusterbuch, 7. Auflage, Tuttlingen, 1922 (Date according to information from manufacturer 1983).
- A&H04 Allen and Hanburys, Catalogue of aseptic operating theatre and ward requisites etc., manufactured and sold by Allen & Hanburys Ltd. London, 1904.
- A&H10 Allen and Hanburys, Catalogue of surgical instruments and appliances, war requisites, aseptic hospital furniture etc., manufactured and sold by Allen & Hanburys Ltd. London, ca 1910.
- A&H25 Allen and Hanburys, Catalogue of surgical instruments and appliances etc., manufactured and sold by Allen & Hanburys Ltd. London, 1925.
- A&H30 Allen and Hanburys, A reference list of surgical instruments and medical appliances, manufactured and sold by Allen & Hanburys Ltd. London, 1930.
- A&H53 Allen and Hanburys, Catalogue of surgical instruments and appliances, manufactured and sold by Allen & Hanburys Ltd. London, 1953.
- Ar95 Arnold and Sons, Catalogue of surgical instruments and appliances, London, 1895.
- D00 Down Bros., Catalogue of surgical instruments and appliances, London, 1900.
- D14 Down Bros., Catalogue of surgical instruments and appliances, manufactured and sold by Down Bros. London, 1914.
- D Downs, Surgical Instruments, Appliances and Equipment Catalogue, 21st edition, Down Bro. and Mayer & Phelps Ltd. London.
- Hn03 Hanhart & Co. Illustrierter Katalog Chirurgischer Instrumente von Hanhart und Ziegler, Zürich, about 1903.
- Hp32 Hauptner, H., Jubiläumskatalog 1857-1932.
- HsEx Hausmann AG, Katalog "Ex", St. Gallen/Zürich, date unknown.

- Hs94 Hausmann, C. Fried., Illustriertes Preisbuch über Instrumente, Apparate, Utensilien ... von C. Fried. Hausmann, Hecht Apotheke, St. Gallen, 1894.
- Hs18 Hausmann, A., AG, Medizinische Neuheiten vom Schweizerischen Medizinal- und Sanitätsgeschäft Hausmann AG, St. Gallen und Zürich, XXIV. Jg., 1918, p. 35.
- Hs33 Hausmann, A., AG, Medizinische Neuheiten vom Schweizerischen Medizinal- und Sanitätsgeschäft Hausmann AG, St. Gallen und Zürich, Anzeigen Beilage LXXVIII, 1933.
- IJ Interview with Dr. P.H. Jaques, 1983
- IS Interview with Dr. E. Sutter, 1983
- Inv99 Inventory of the medical Mission, 31.12.1899
- Inv11 Inventory of the medical Mission, 30.6.1911
- Inv12 Inventory of the medical Mission, 30.6.1912
- Inv13 Inventory of the medical Mission, 1913
- Inv14 Inventory of the medical Mission, 1914
- Inv18 Inventory of the medical Mission, 1918
- Inv19 Inventory of the medical Mission, 31.3.1919
- Inv21 Inventory of the medical Mission, 31.3.1921
- K&S Krohne and Sesemann's Catalogue of Surgical and Orthopaedic Instruments, London, 1878.
- Lü27 F. Wülfling-Lüer, Maison Lüer, Catalogue Spécial Illustré d'Instruments de Gynécologie et d'Obstétrique, Paris, 1927.
- Ma95 Mathieu, Raoul, Catalogue Mathieu, Instruments de Chirurgie, Paris 1895. Maladies de la Bouche, Maladies des Yeux.
- Ma97 Mathieu, Raoul, Catalogue Mathieu, Paris, 1897.
- Sch06 Schaerer, M., Illustrierter Katalog über Technische Hilfsmittel und Einrichtungen für die gesamte Medizin und Chirurgie, M. Schaerer AG, Bern, about 1906.
- Sch12 Schaerer, M., Technische Mitteilungen der Firma Sanitätsgeschäft M. Schaerer AG, Bern, Okt.-Nov. 1912.

- SM25 Surgical Manufacturing, Illustrated Catalogue of surgical instruments and appliances by The Surgical Manufacturing Co. Ltd, 6th edition, London, 1925.
- SM26 Surgical Manufacturing, Illustrated Catalogue of surgical and scientific instruments and appliances, The Surgical Manufacturing Co. Ltd., 7th edition, London, 1926-1935.
- Wi12 Windler, H. Hauptkatalog 50, Berlin, 1912.

I L L U S T R A T I O N S

Figures 1 - 4 are rephotographed photos, which are in the hospital photo-album.

Figure 5 is copied out of Dr. G. Liengme's book about Elim (Ref. 29)

Illustration to I16 from Lü27

Illustration to C2 from Ref. 8

Illustration to C3 from Ref. 42

Illustration to A4 from Ref. 10

Illustration to L21 from Ref. 34

Illustration to N5 from Ref. Hs18

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S U M M A R Y

A short history of the former Swiss mission hospital, Elim Hospital, is given with short biographies of its superintendents. The 92 items of the local museum are, with the exception of two of them, identified. They are grouped and listed. The fotos of them are followed by a short description and some explanatory remarks concerning their use and history.

C U R R I C U L U M V I T A E

Ich wurde am 12. September 1953 in Zürich geboren. In Zollikerberg besuchte ich die Primarschule. 1972 bestand ich die A-Matur des Literargymnasiums Rämibühl in Zürich. Anschliessend begann ich mit dem Medizinstudium an der Universität Zürich, welches ich 1978 mit dem Staatsexamen abschloss. Von meinen Assistenzjahren verbrachte ich eines auf der Neurochirurgischen Klinik des Universitätsspitals Zürich, eineinhalb auf der Chirurgischen Klinik des Kantonsspitals Aarau, zwei im Elim Hospital, Nordtransvaal, Südafrika und eines auf der Medizinischen Klinik des Kantonsspitals Aarau. Zur Zeit bin ich in der Rehabilitationsklinik der Schweizerischen Unfallversicherungsanstalt in Bellikon tätig. Ich werde demnächst eine Allgemeinpraxis eröffnen.

Seit 1979 bin ich mit Francine Guibentif verheiratet. Wir haben zwei Söhne, Patrick Charles und Nicolas Tiyani und eine Tochter, Dominique Nellie.

